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THE CUCURBITS

ILLUSTRATED

The J.C. Robinson Seed Co.
WATERLOO, N.E.B.

Feb. 27-1937.

W. R. Beattie

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THE CUCURBITS

Illustrated

1937

FIFTIETH ANNIVERSARY
NUMBER



Issued by

THE J. C. ROBINSON SEED CO.

WATERLOO, NEBRASKA

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ROCKY FORD, COLORADO - MODESTO, CALIFORNIA

Edited by

W. A. BATSON

A DEDICATION

THE CUCURBITS ILLUSTRATED IS
RESPECTFULLY DEDICATED TO THE
FOND MEMORY OF J. C. ROBINSON
THE FOUNDER OF THIS COMPANY
IN 1888



JAMES CHAUNCEY ROBINSON
A. D. 1861 - 1928

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Foreword

In submitting our descriptive booklet on vine seeds "The Cucurbits, Illustrated" to the trade, we have in mind that it may serve a worthy double purpose.

First: As a guide to a thorough knowledge of varieties, plant breeding and improvement work for the benefit of our loyal friends and customers among seedsmen, everywhere.

Secondly: It is our earnest desire that the years of our faithful endeavors, represented by this volume may serve as a lasting tribute to all of those fine pioneer characters in the history of American seed production.

THE EDITOR

Introductory

The Cucurbits are perhaps, among the most interesting of all the vegetables produced for seed. They offer a wide range of shapes, sizes and coloring of fruit and there seems hardly to be a limit to the number of new developments which appear from time to time. Our descriptive booklet, "The Cucurbits," was issued in 1925. In checking over its contents as compared to this edition, a period of some twelve years, we find that many changes have occurred in types and varieties. In this length of time about 45 standard varieties of vine seeds have been added to growers lists whereas about this same number have become almost obsolete over the same period.

Our highly competitive markets demand improved quality and uniformity in products of every kind. Changes in varieties are constantly being developed to replace the older kinds in vine seed. A number of interesting developments are now ready for the market but we have not included them among our descriptions until their merits have become more generally proven. As time progresses we hope to submit additional information on the new stocks which are released to be added to this book.

We realize that our descriptions and illustrations may not agree with the opinions of others and we welcome both suggestions and criticism. It should be borne in mind that different stocks vary to some degree in a number of respects. Further, results may vary to some extent under different climatic and cultural conditions. As nearly as possible we have endeavored to describe the stocks that, in our opinion, have proven generally satisfactory for their intended purpose. We know that this book cannot be perfect but it is the result of many years of careful study and preparation.

In compiling the data in this edition we are indebted to a number of able assistants; including our numerous friends in the seed trade, many of the nation's leading plant pathologists and members of our own organization; to the U. S. Department of Agriculture and State Experimental Stations for their various bulletins as well as the learned writers who have preceded our generation; among them, Dr. E. Lewis Sturtevant, first director of the New York Agricultural Experiment Station, Geneva, New York, from whose works on early plant history we have quoted in a number of instances.

To all of those who have so generously contributed of their time and knowledge to this work and to all of those who have so generously contributed of their patronage during our fifty years of seed growing, we express our sincere appreciation.

Respectfully,

THE J. C. ROBINSON SEED CO.



Cucumber

(*French*, CONCOMBRE; *Italian*, CETRIOLA; *Spanish*, COHOMBRO;
Danish; AGURK: *German*, GURKEN)

Cucumbers are botanically classified as *Cucumis Sativus*. They are believed to have come, originally, from Asia and Egypt. Its culture is indicated from historical data as more than 3000 years. They were known to the ancient Greeks and Romans and mention is made of their forced culture in early times. The Emperor Tiberius had cucumbers at his table every day in the year, Columbus grew them at Haiti in 1494 and in 1535, Jacques Cartier found "very great cucumbers" grown by the Indians near what is now Montreal. They are now widely cultivated in nearly every part of the temperate zones.

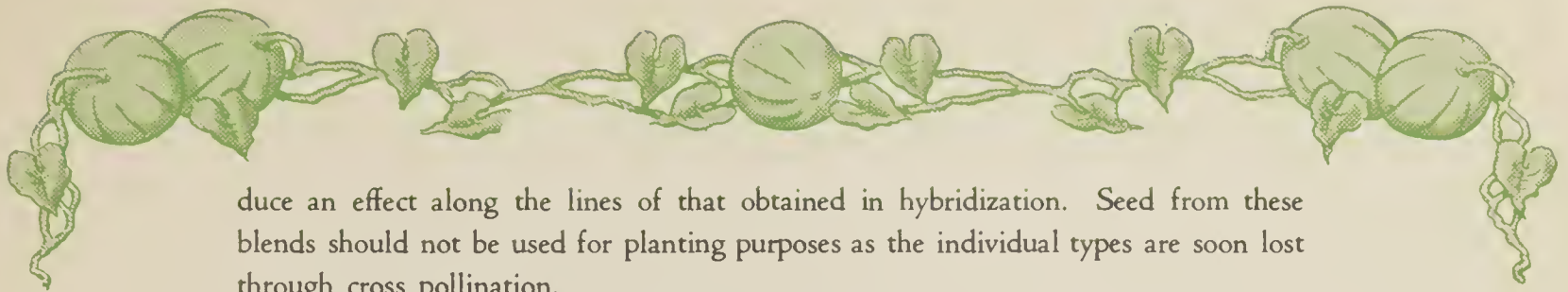
Cucumbers require a rather rich, moist, warm soil and are quite sensitive to weather conditions, insects and diseases.

The States in which cucumbers are grown in the order of their yields are about as follows: Michigan, Wisconsin, California, Indiana, Colorado, Minnesota, Ohio, Iowa, New York and Illinois. The leading seed producing areas are in the States of Colorado, Michigan and California. The annual production of seed in the United States is about one million pounds and the average yield per acre is about 250 pounds. It requires from 40 to 45 fruits to yield a pound of seed. There is an average of about 300 seeds per fruit in the standard varieties. The seed usually retain a satisfactory germination for at least five years when properly stored.

Some progress has been made in the development of disease resistance in cucumber and breeding work of considerable importance has been conducted for the improvement of purity. Efforts are now being made to develop strains that are immune to mosaic, curly top and other common troubles. (See Plant Breeding.)

Pickling blends have met with success in some cases and are so used by certain of the pickling houses. The common practice is to make a mechanical mixture of seed to include about 80% of the most desirable variety with about 10% each of two similar kinds. This combination gives some variation in type of pickles which covers the need of the various sizes required for packing. Further, it is believed that cross pollination between unrelated kinds tends to increase the yield of fruits and to pro-





duce an effect along the lines of that obtained in hybridization. Seed from these blends should not be used for planting purposes as the individual types are soon lost through cross pollination.

Cucumbers are generally described as "White Spine" or "Black Spine." The term "White Spine" refers to the color of the mature fruit and indicates a white color when ripe. The term "Black Spine" indicates the cucumber will be yellow at maturity.

In our descriptions, size and weight applies to fully matured fruits and the term "edible in days" includes the growing period from planting date to the time the variety is used for its individual purpose, that is, for pickling or slicing. These dimensions and maturity dates are mainly obtained in Colorado under average growing conditions.





**A & C SPECIAL
(White Spine)**

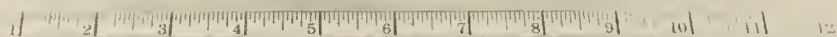
Size: 12 x 3 inches

Weight: 2½ pounds

Edible in 60 days

Principle use: Main market

A very desirable market Cucumber because of its uniform length and intense dark green color. It has become increasingly popular for all market purposes and is a vigorous, high yielding variety. The fruits taper at both ends and the seeding qualities are light because of the thick flesh.



**ARLINGTON
(White Spine)**

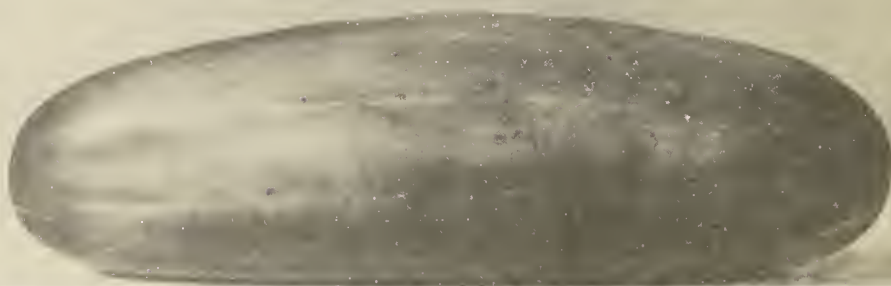
Size: 9¾ x 3¼

Weight: 2½ pounds

Edible in 60 days

Principle use: Home garden

Although one of the older types, it maintains considerable popularity; a main crop sort, it is early, productive, and the color is good in the young fruits. This cucumber has blocky ends and is uniform in thickness throughout.





**BLACK DIAMOND OR
STAYSGREEN
(White Spine)**

Size: 9 x 3 inches

Weight: 1 $\frac{3}{4}$ pounds

Edible in 52 days

Principle use: Early market

It is one of the earliest and most popular white spine varieties for market use. The length has been increased over the original introduction. The extremely dark green color is retained well into the mature stage. It has rounded ends with a slight taper at the stem end and the variety is highly productive.



**BOSTON PICKLE
(Black Spine)**

Size: 8 $\frac{1}{4}$ x 3 $\frac{1}{4}$ inches

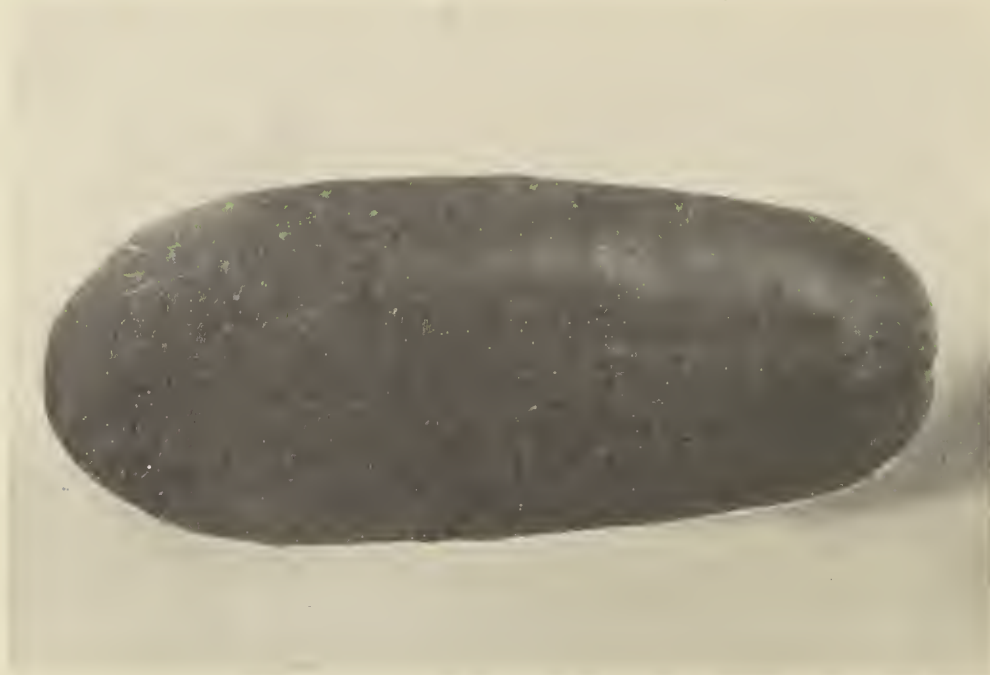
Weight: 1 $\frac{3}{4}$ pounds

Edible in 58 days

Principle use: Large pickles

One of the largest of the pickling kinds with uniform shape and blocky ends. It continues to be among the most popular for home use, and is both early and productive. The mature fruits show a trace of netting. Other strains of this variety appear to be smaller in shape and size.





CHICAGO PICKLE (Black Spine)

Size $7\frac{3}{4} \times 3$ inches

Weight: $1\frac{1}{2}$ pounds

Edible in 58 days

Principle use: Pickling

One of the most popular of the small, early pickle varieties. It has square ends with symmetrical shape and a tendency to taper slightly toward the blossom end. The Chicago Pickle is a productive, vigorous growing kind enjoying universal popularity for all pickling purposes.



THE COLORADO (White Spine) (All-America Award)

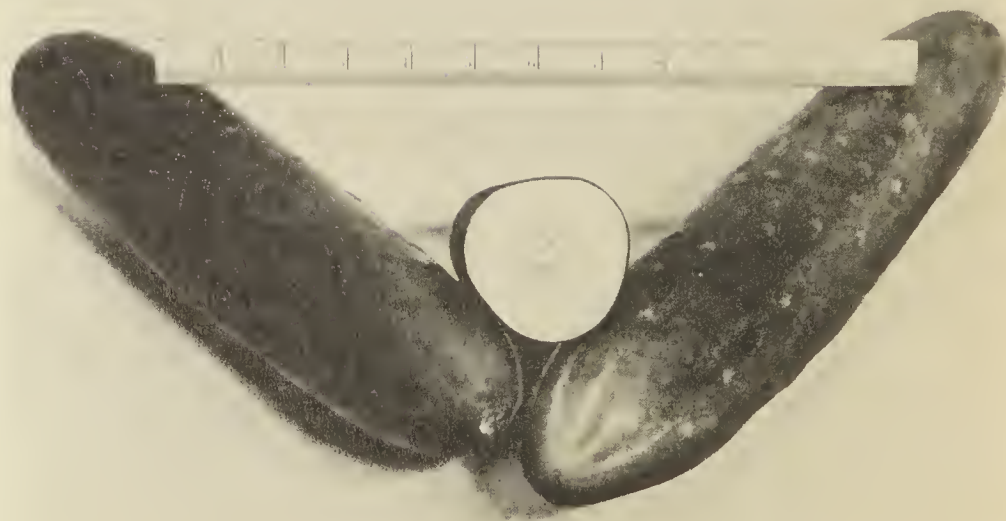
Size: $12\frac{1}{2} \times 3\frac{1}{4}$ inches

Weight $2\frac{1}{2}$ pounds

Edible in 60 days

Principle use: Main market
(The finest slicing cucumber)

One of our own introductions which received all-America distinction for 1935. A beautiful long, slender, dark green cucumber commanding a premium on the critical markets. It has become exceedingly popular because of its excellent shape and intense color which is maintained longer than in any other variety. The fruit is inclined to taper especially at the stem end. It is a vigorous, productive variety, highly resistant to unfavorable growing conditions. The seeds form late in the season and thus the seed yields are not heavy.



COOL & CRISP
(White Spine)

Size: 9½ x 3 inches

Weight: 2 pounds

Edible in 55 days

Principle use: Slicing

This variety is tapering at the stem end, with prominent knobs or warts. Nearly white when fully mature, the cucumber is very handsome when at the slicing stage, and is slightly curved across the top. While not a popular variety it is early, prolific and desirable.



DANISH PICKLE
(White Spine)

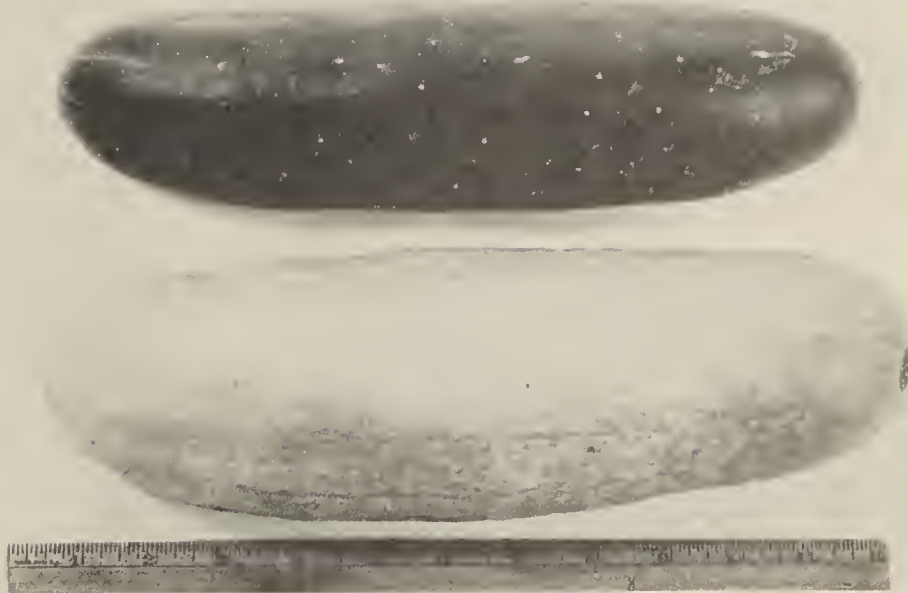
Size: 12 x 3½ inches

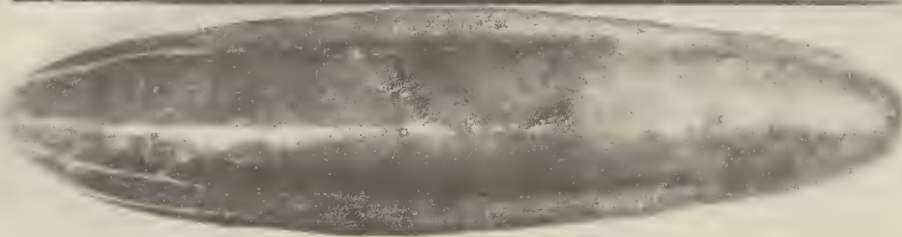
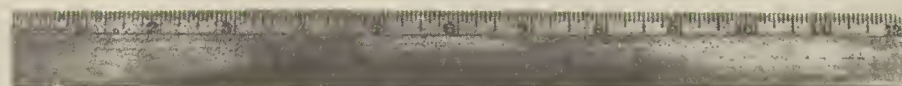
Weight: 3 pounds

Edible in 56 days

Principle use: Chunk pickles

A large, long cucumber of Danish origin, it is thickly covered with fine spines. It is early in maturing, very prolific, and will continue to bear fruit over a long period of time. The skin is rather thick and tough and the fruits are not inclined to be ill-shapen under severe weather conditions as are other large varieties. It is used chiefly in Europe and Canada.





DAVIS PERFECT (White Spine)

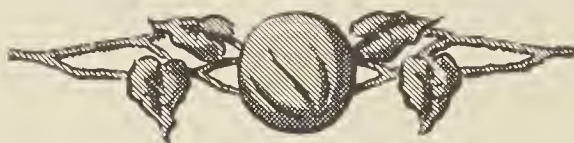
Size: 12 x 3 inches

Weight: 2½ pounds

Edible in 58 days

Principle uses: Market and
home garden

A long, smooth cucumber with tapering ends. It has enjoyed wide use for many years because of its dark green color when in the slicing stage, but has been superseded by newer introductions to some extent. It is a shy-seeding variety, medium late in maturity and the edible qualities are excellent. It is also used to some extent in greenhouses.



DELTUS OR BARTELDES (White Spine)

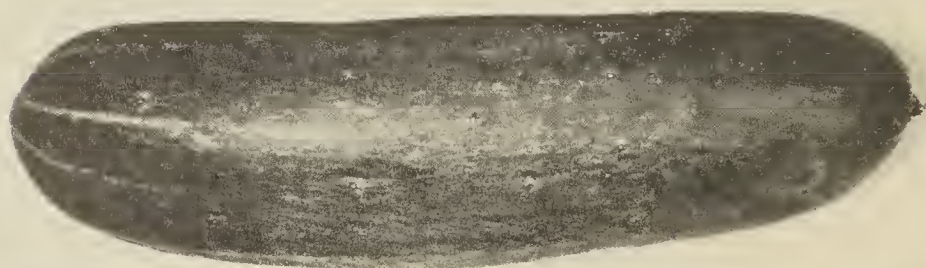
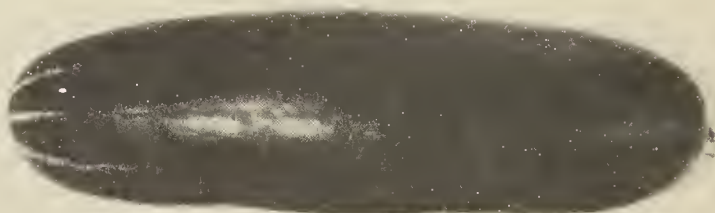
Size: 12¼ x 3¼ inches

Weight: 3 pounds

Edible in 65 days

Principle uses: Market and
Greenhouse

The Deltus has a white firm flesh and few seeds which develop late in the season. Its shape is uniform throughout with rounded ends and a deep emerald green color lasting well into the full grown stage. It has excellent quality and is desirable for greenhouse culture.





**EARLIEST OF ALL
(White Spine)**

Size: 9 x 3 $\frac{3}{4}$ inches

Weight: 2 pounds

Edible in 55 days

Principle use: Shipping

One of the earliest of the white spine cucumbers, this variety is medium in length, smooth and very symmetrical, while the dark green color is excellent. It is also adapted for pickling and is grown commercially to a large extent in some sections.



**EARLY CLUSTER
(Black Spine)**

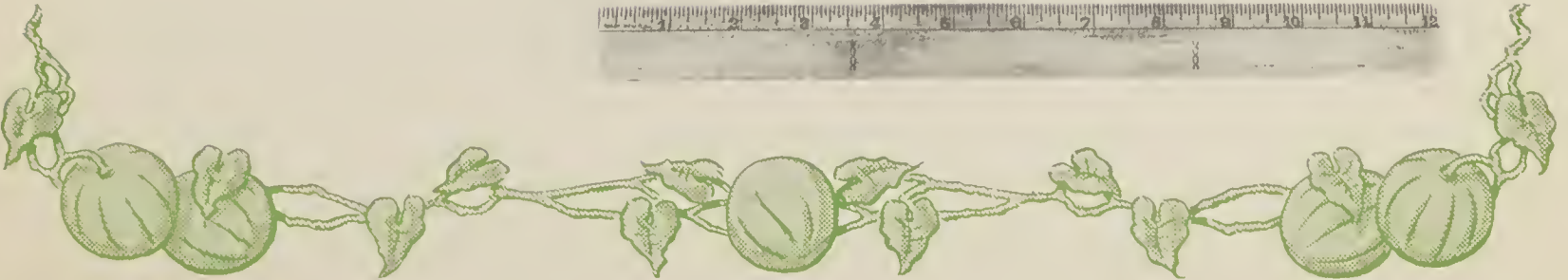
Size 6 $\frac{3}{4}$ x 2 $\frac{7}{8}$ inches

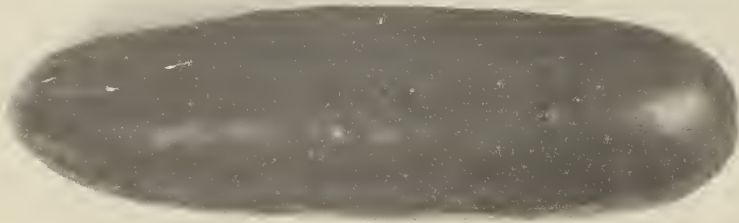
Weight: 1 $\frac{1}{4}$ pounds

Edible in 52 days

Principle use: Early pickles

A small variety, supposed to grow in clusters near the roots, but this is not noticeable. It is very early, prolific and uniform and it is one of the most popular of the early pickling strains.





EARLY FORTUNE (White Spine)

Size: $9\frac{3}{4}$ x $2\frac{7}{8}$ inches

Weight: $2\frac{7}{8}$ pounds

Edible in 58 days

Principle uses: General and shipping

Early Fortune retains its popularity as the second earliest shipping cucumber. It holds its dark green color and remains edible longer than almost any of the early types of white spine varieties. It tapers gradually at both ends; the skin is smooth, and the fruits are uniform and symmetrical in shape. The seeding qualities are very good, hence the seed supply is always certain, an item to be seriously reckoned with on some kinds.



EARLY FRAME OR SHORT GREEN (Black Spine)

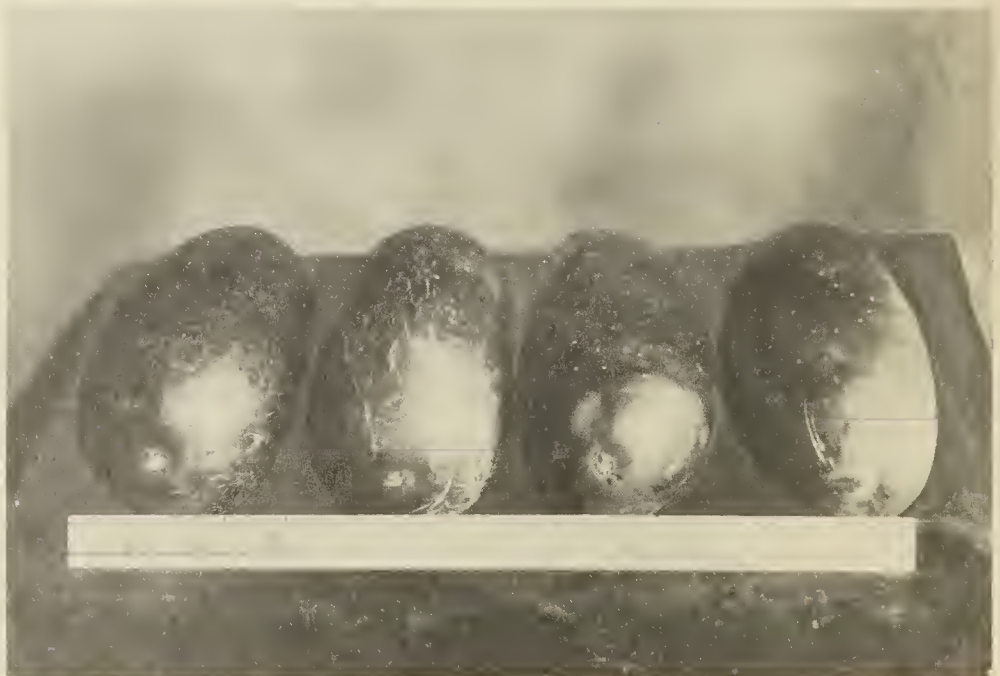
Size: $8\frac{1}{2}$ x $3\frac{1}{2}$ inches

Weight: 2 pounds

Edible in 58 days

Principle use: Home garden

A large type of the early pickling kinds. The ends are blocky, or square, and the hardness of this stock is an outstanding feature. The skin when mature is a deep russet color and slightly netted. It is a little late in maturing, but fine for the second crop of pickles.



**EARLY RUSSIAN
(Black Spine)**

Size: $5\frac{7}{8}$ x $2\frac{5}{8}$ inches

Weight: 1 pound

Edible in 50 days

Principle use: Small, early
pickles

The smallest cucumber we grow, extremely early and amazingly productive. It is of little use except for small, uniform pickles, but in districts where the late maturing kinds will not ripen this cucumber is popular. Further, it is sufficiently early that the pickles are often developed before the various plant diseases have become troublesome. The vines are a little less in length than most other varieties.



**EXTRA LONG OR
EVERGREEN
(White Spine)**

Size: 12 x $2\frac{3}{4}$ inches

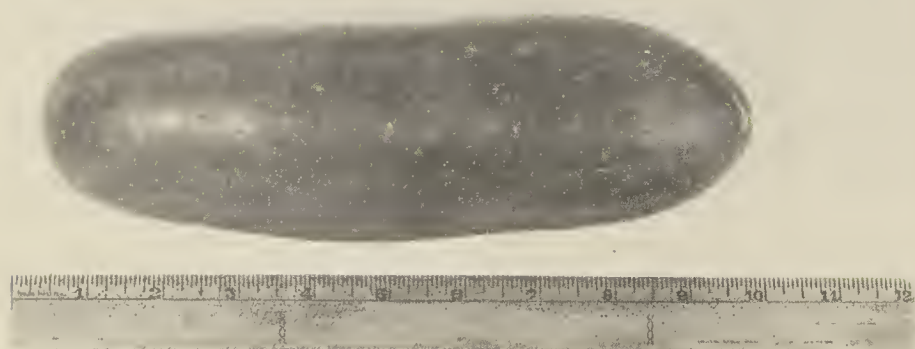
Weight: 3 pounds

Edible in 60 days

Principle use: Slicing

Somewhat similar to the Davis Perfect, except it appears larger as the ends taper but slightly. Not a widely used variety, yet it is a standard main crop cucumber, medium late in maturity. The color does not hold as well as in some of the other long white spine types. A shy seeding kind.





FORDHOOK PICKLING (Black Spine)

Size: $8\frac{3}{4}$ x 3 inches

Weight: 2 pounds

Edible in 54 days

Principle use: Large pickles

Quite similar in general appearance to Cool and Crisp, except this cucumber is yellow when mature. The fruits taper at both ends with warts or knobs, mostly toward the stem end. It is not widely used, yet is early, prolific and quite desirable.



FORDHOOK FAMOUS (White Spine)

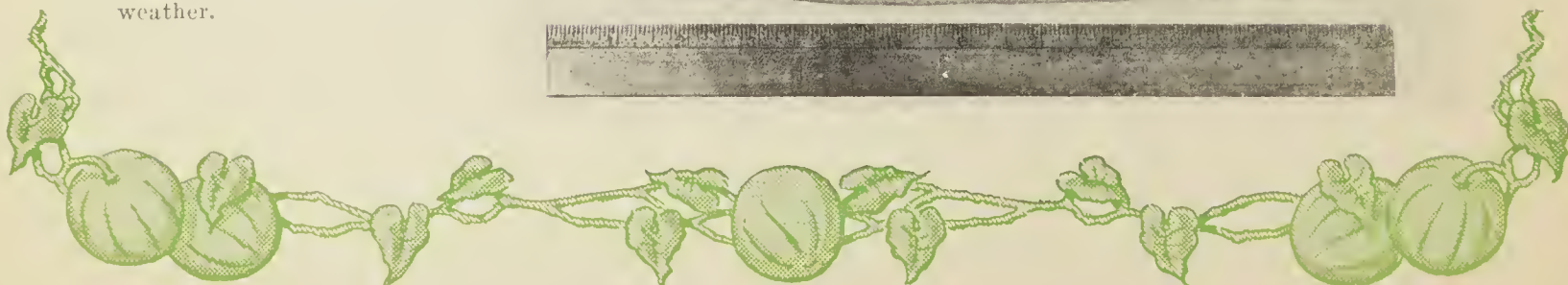
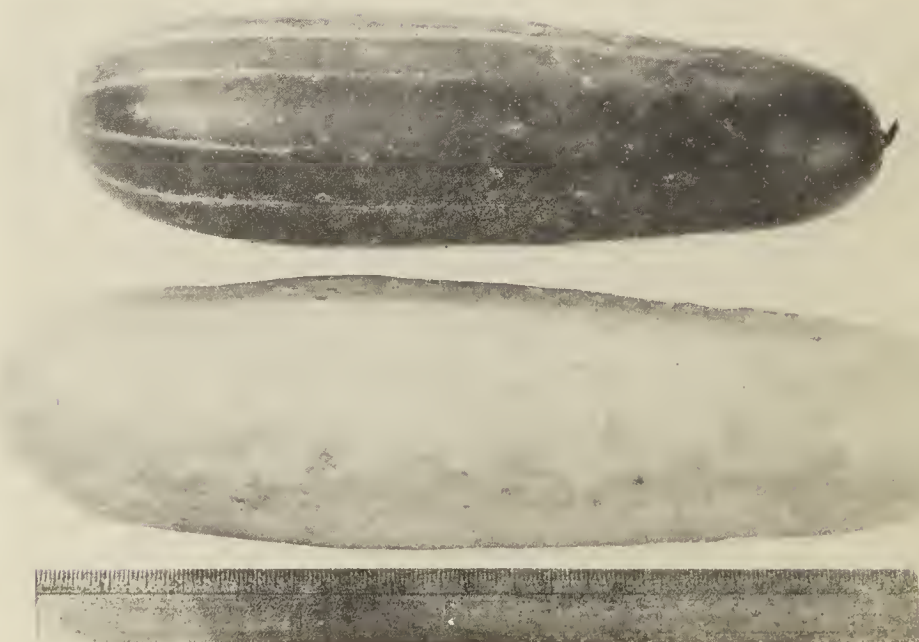
Size: 13 x $3\frac{3}{4}$ inches

Weight: $3\frac{1}{4}$ pounds

Edible in 60 days

Principle use: Home garden

A white spine sort corresponding to Improved Long Green in size and shape. It is medium late in maturing, but a very heavy yielder and a fine slicing variety for the home garden. There is no tendency for this evenly shaped fruit to grow crooked in unfavorable weather.





**GREEN PROLIFIC
(Black Spine)**

Size: 8 x 2 $\frac{3}{4}$ inches

Weight: 1 $\frac{1}{2}$ pounds

Edible in 56 days

Principle use: Pickling

This variety is quite widely used, and for early, uniform pickles is excellent. The fruits are smooth, cylindrical; the ends are square and the small pickles are more slender than are those of other varieties. It resembles Boston Pickle but is more slender.



**HENDERSON'S
PERFECTED
(White Spine)**

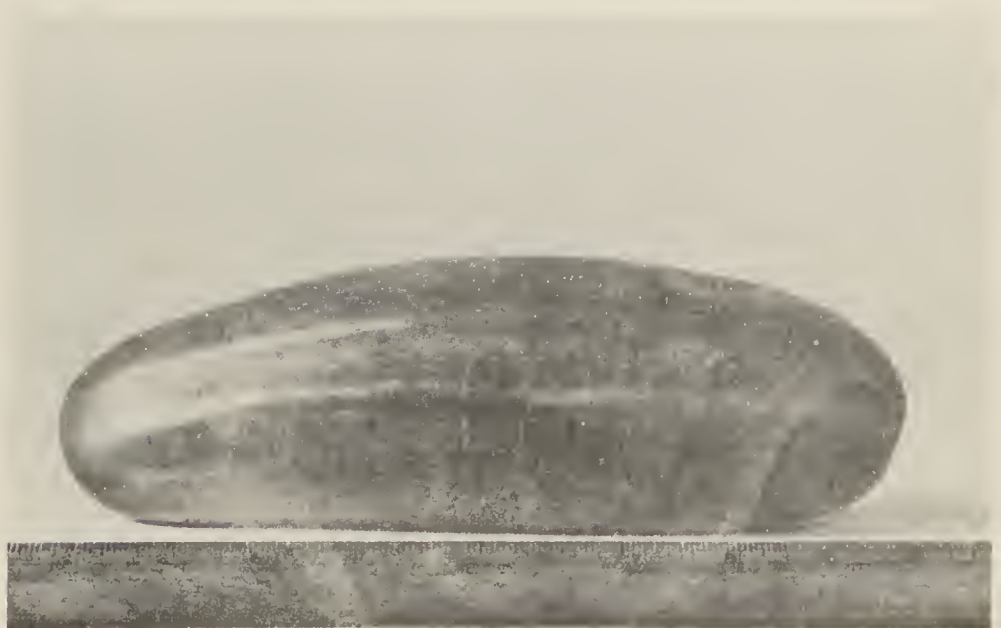
Size: 9 $\frac{1}{2}$ x 2 $\frac{7}{8}$ inches

Weight: 1 $\frac{3}{4}$ pounds

Edible in 58 days

Principle use: Shipping

One of the desirable strains of the medium early white spines, this variety has a vivid dark green color which is well retained. The fruits are very uniform, smooth, and the vines are hardy and prolific.





**IMPROVED
LONG GREEN
(Black Spine)**

Size: 13 x 3 $\frac{3}{4}$ inches

Weight: 3 $\frac{3}{4}$ pounds

Edible in 62 days

Principle uses: Slicing and
pickling

The standard cucumber for general table use; it has enjoyed this distinction for many years and is a favorite in home gardens. It is very prolific, medium late, and for hardiness and disease resistance is among the best varieties. The small pickles are well shaped, while in the slicing stage the slightly warted fruits are very attractive in length and color.



**IMPROVED
WHITE SPINE
(White Spine)**

Size: 8 $\frac{1}{4}$ x 3 $\frac{1}{4}$ inches

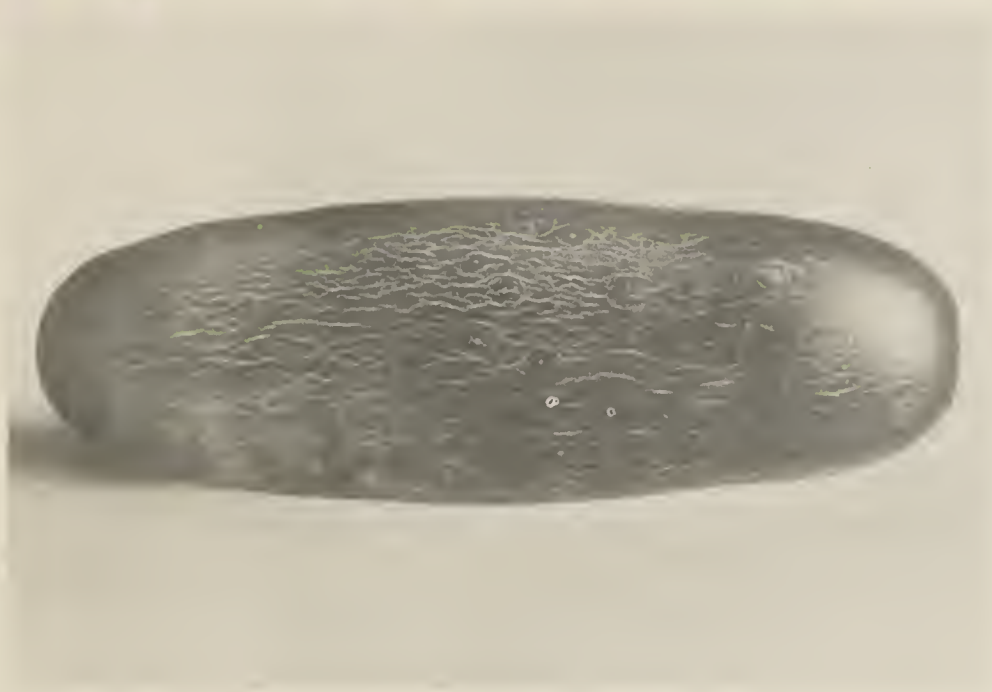
Weight: 2 pounds

Edible in 56 days

Principle use: Home garden

One of the earliest and most prolific of the older types of white spines, this variety is very widely used. It is adapted for either slicing or pickling; the green color, however, is not as good for shipping as it is with some of the newer white spines. For the home garden, it is among the best, as it can be used for all purposes.





JAPANESE CLIMBING (Black Spine)

Size: $9\frac{3}{4} \times 3$ inches

Weight: $2\frac{1}{4}$ pounds

Edible in 58 days

Principle use: Slicing

A distinct variety used for its climbing qualities to cover trellises and fences. The color when ripe is a deep russet, covered with a heavy netting. When in the slicing stage the deep green color is splendid. A very hardy, vigorous growing cucumber, the edible qualities are good.



JERSEY PICKLE (Black Spine)

Size: $9 \times 2\frac{7}{8}$ inches

Weight: $1\frac{3}{4}$ pounds

Edible in 56 days

Principle use: Pickling

A slender type of the very early pickle strains, this variety produces uniform, smooth fruits. It is not as widely used as some others, but is a standard kind; it tapers distinctly at the stem end. It is identical to Perfected Jersey Pickle.





KLONDIKE WHITE SPINE (White Spine)

Size: 9 x 3 inches

Weight: 2 pounds

Edible in 58 days

Principle uses: Shipping and pickling

It belongs to the Early Fortune class but is smaller. It is desirable for long distance shipping, as the deep green color holds extremely well. This strain has proven very popular for pickling purposes, and is the choice of the early white spines in this respect. The ends taper very slightly, the fruits are smooth and symmetrical, and it is valuable on account of its earliness.



LEMON

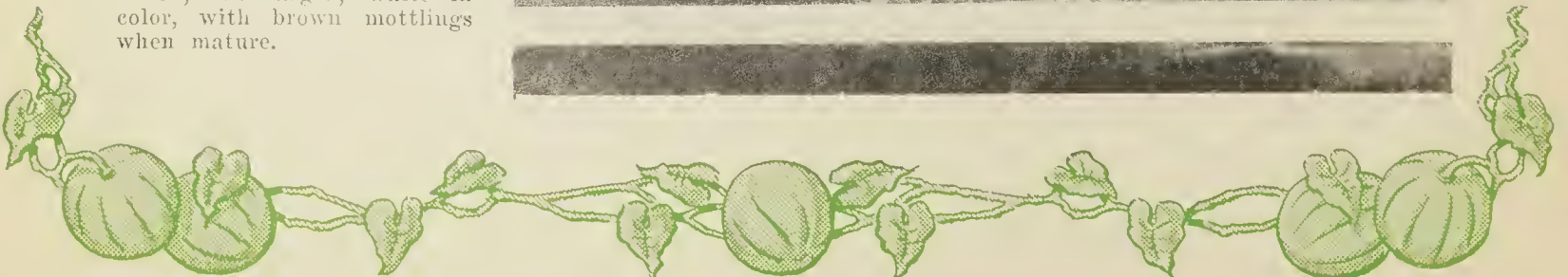
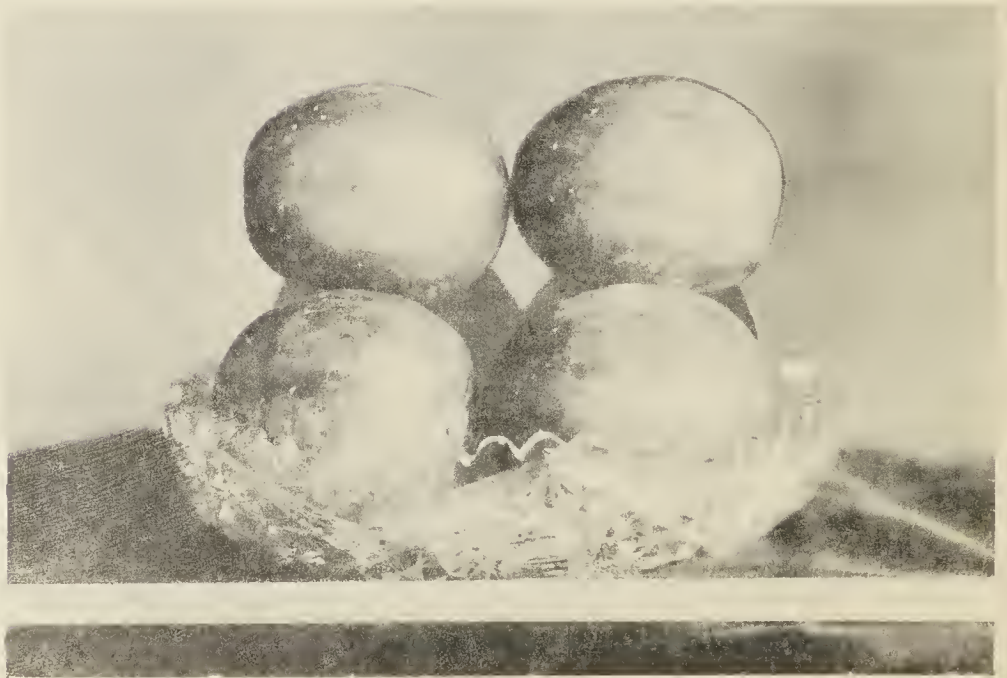
Size: 3 x 2 inches

Weight: $\frac{1}{4}$ pound

Edible in 52 days

Principle uses: Pickling and salads

As its name indicates, it is a little similar in appearance to a lemon. Is used for pickling and in salads; or the seeds are removed and it is stuffed with relishes. It is entirely distinct and should not be confused with Garden Lemon or Mango Melon. The true Lemon has seeds of about the same size as other cucumbers. The fruits are shaped similar to a lemon, but larger; white in color, with brown mottlings when mature.





**MONARCH OR
HEINZ PICKLE
(Black Spine)**

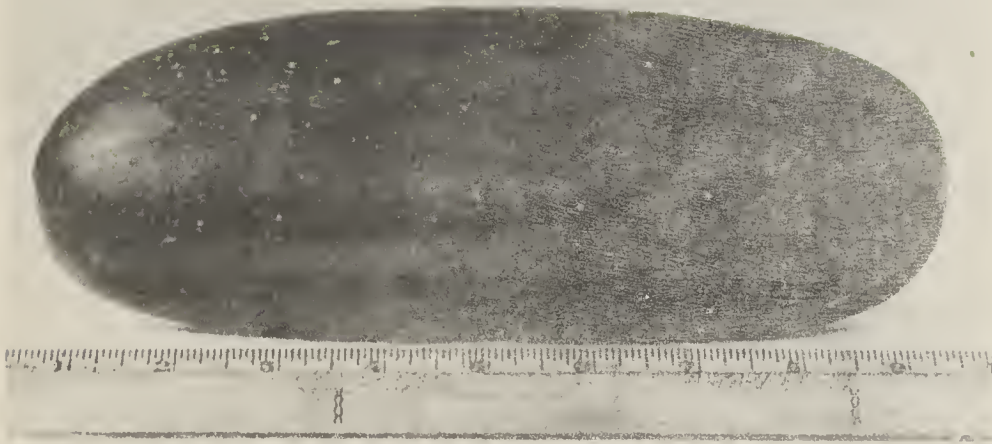
Size: $8\frac{1}{2}$ x $3\frac{1}{8}$ inches

Weight: $1\frac{1}{2}$ pounds

Edible in 56 days

Principle use: Pickling

A rather large size general purpose variety for pickling, which has proven popular both for packers and home garden use. It is a deep russet color at maturity and shows an inclination to taper at the stem end.



**NATIONAL PICKLE
(STARR'S)
(Black Spine)**

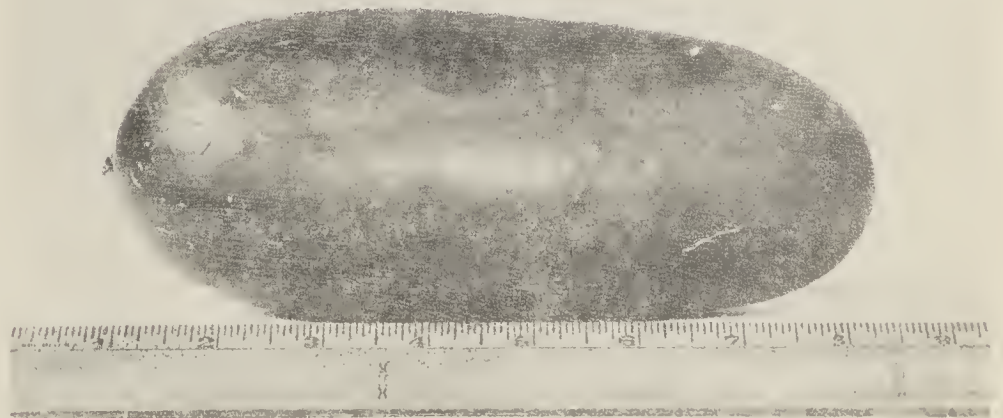
Size: 7 x 3 inches

Weight: $1\frac{1}{4}$ pounds

Edible in 55 days

Principle use: Pickling

A recent introduction of the early pickling types; it has met with general favor for the critical trade, for this particular type of pickle. It was developed for the National Pickle Packers' Association and is a remarkably early, productive and uniform strain. The small pickles are rather short and thick, while the larger sizes are smooth and cylindrical, with well-rounded ends. The entire flesh of the fruits is uniformly thick thus preventing splitting in the center and hollow sides in the pickles.





SERPENT OR SNAKE

Average length about 24 inches

It is used to some extent for pickling when young and tender, but chiefly as a curiosity or novelty.

While it has always been classed as a cucumber, it really belongs to the muskmelon family. It resembles its name, never growing straight unless suspended, but developing a variety of interesting shapes.



SNOW'S PERFECTION PICKLE

(Black Spine)

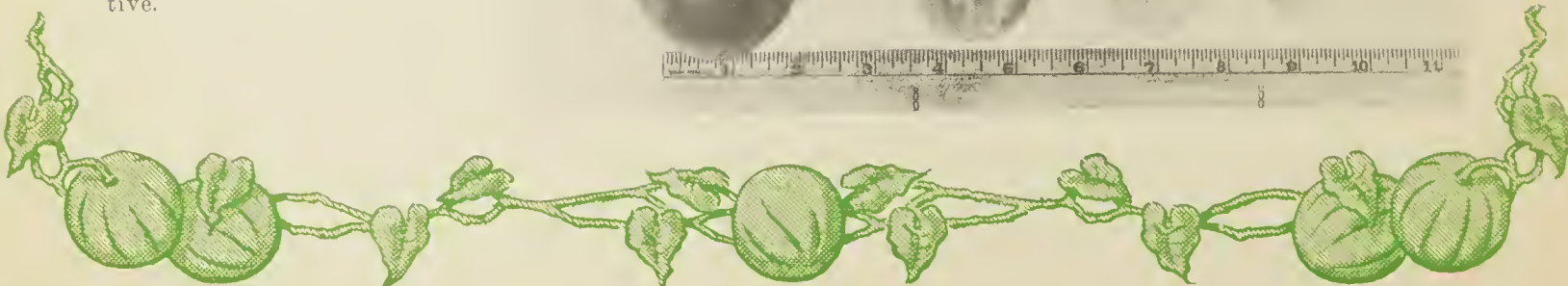
Size: $7\frac{1}{2} \times 3\frac{3}{8}$ inches

Weight: $1\frac{1}{2}$ pounds

Edible in 56 days

Principle use: Pickling

Rather like the Chicago Pickle except that it is shorter. It is a smooth, symmetrical variety and is highly recommended for its early, uniform pickles. The Snow's Pickle is enormously productive and the square-ended fruits are very attractive.



STRAIGHT EIGHT
(White Spine)

(1935 All-America Gold Medal Award)

Size: $9\frac{1}{2}$ x $2\frac{3}{4}$ inches

Weight: 2 pounds

Edible in 58 days

Principle use: Shipping

As its name indicates, it grows very straight; a long, slender fruit with a slight taper at each end. At the edible stage the length averages about eight inches and the color is an intense dark green. A smooth, medium early strain with considerable merit. It was introduced by Ferry-Morse Seed Co.



**THORBURN'S
EVERBEARING**
(Black Spine)

Size: $6\frac{7}{8}$ x 3 inches

Weight: $1\frac{1}{4}$ pounds

Edible in 52 days

Principle use: Early pickles

A small, early variety a little larger than Early Russian. If the fruits are kept picked during the growing season it will continue to bear almost indefinitely. It is of little use except for pickling, but it is so early in maturing that it is used for the first crop pickles.





**VAUGHAN OR
LONGFELLOW
(White Spine)**

Size: 15 x 3 $\frac{3}{8}$ inches

Weight: 3 $\frac{3}{8}$ pounds

Edible in 74 days

Principle use: Shipping

It is truly a beautiful cucumber, one of the finest of the large varieties. Its dark green color, length and well balanced shape place it in a distinctive class. The vines require satisfactory growing conditions throughout the season to produce well-shapen fruits of good color, but properly grown it develops cucumbers of outstanding appearance.



WEST INDIA GHERKIN

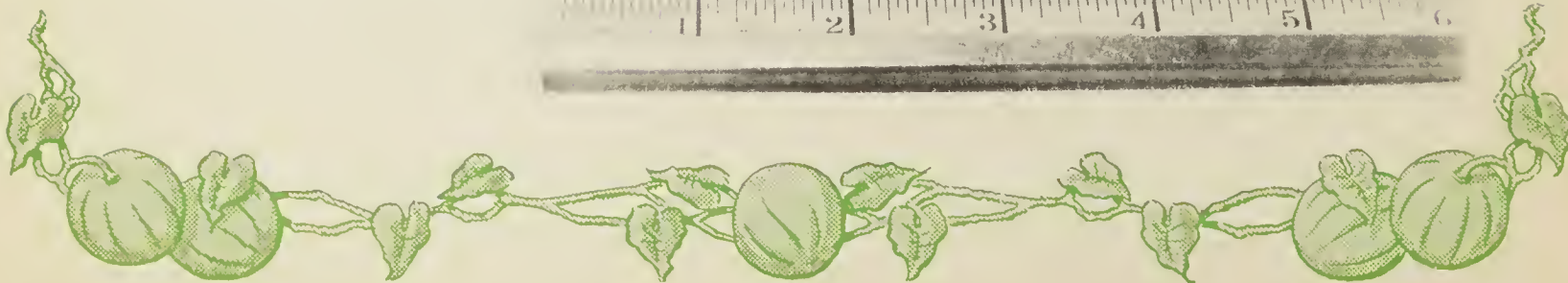
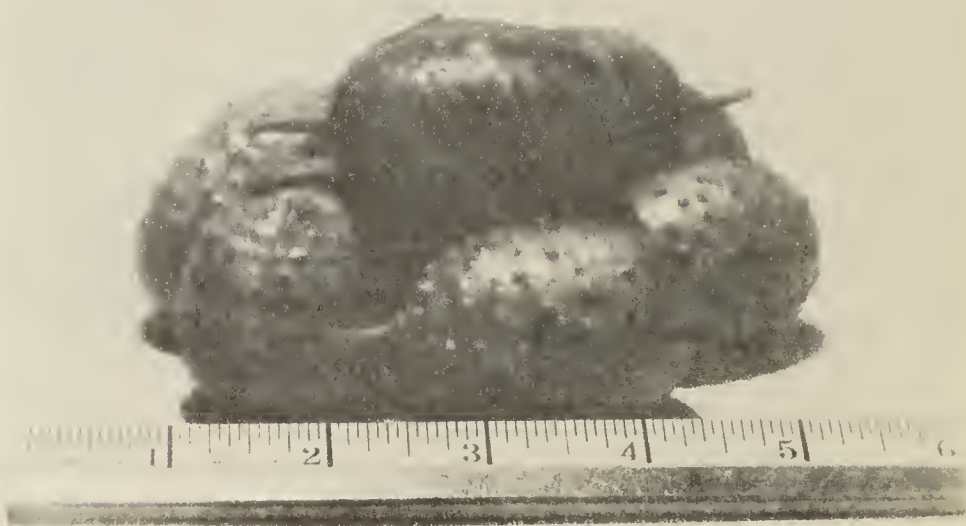
Size: 2 x 1 inches

Weight: 2 ounces

Edible in 50 days

Principle use: Small pickles

It is a native of Jamaica, and is generally used for very small pickles or stuffed with relishes. The outside is covered with small elastic spines and the color is always green. It is a heavy bearing variety, produced on vigorously hardy vines. The tiny seeds are abundant but edible until the fruit approaches maturity.





WHITE LEMON OR CRYSTAL APPLE

It is about the same size and shape of the true Lemon variety, with the exception that the fruits are almost white at all stages of growth. Its use is limited in America but has met with favor elsewhere at the expense of the original Lemon variety. The uses are identical and both are produced on healthy vines among dense foliage.



WHITE WONDER (White Spine)

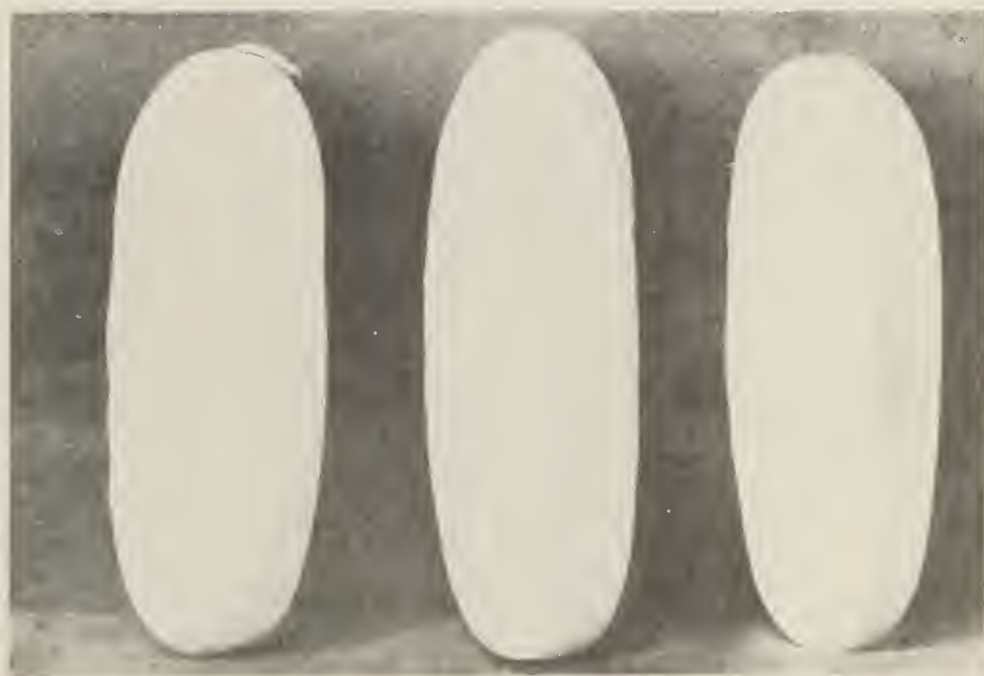
Size: $8\frac{1}{2}$ x $3\frac{1}{8}$ inches

Weight: $1\frac{7}{8}$ pounds

Edible in 58 days

Principle use: Pickling

This is a novelty, but it has considerable merit. It is white at all stages of growth; medium late, and the ends are square in the fully-developed fruits. The small white pickles taper at the blossom end, and are very attractive when packed in glass containers. The vines seem to be exceptionally vigorous and disease free.





**WOODRUFF'S HYBRID
OR CLARK'S SPECIAL
(White Spine)**

Size: $10\frac{3}{4}$ x $3\frac{1}{4}$ inches

Weight $2\frac{1}{2}$ pounds

Edible in 62 days

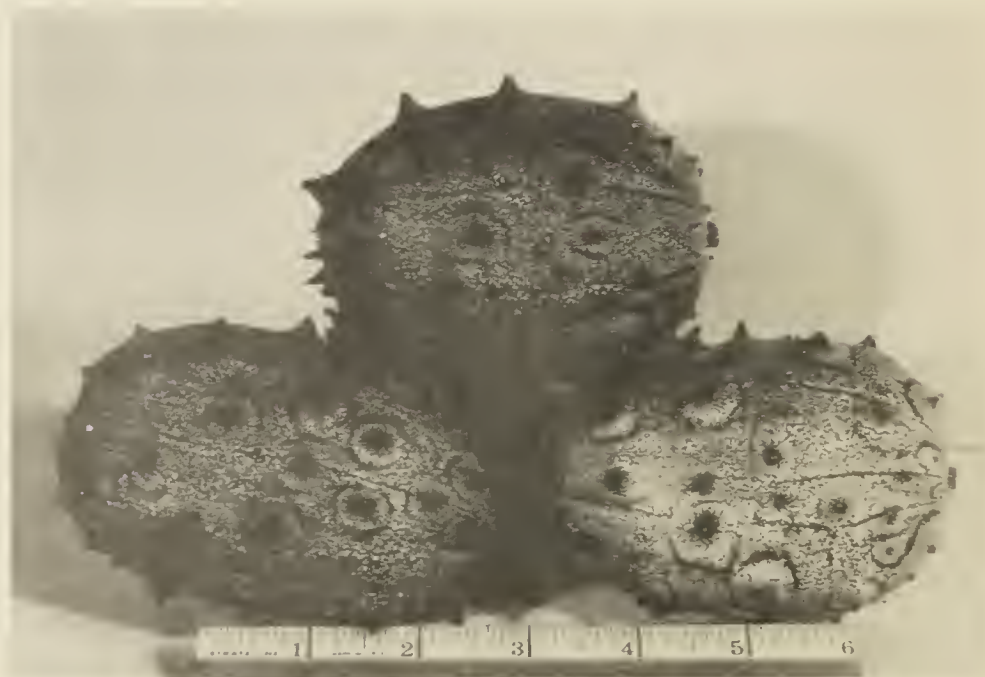
Principle use: Shipping

A cucumber of excellent size and color for long distance shipping and gardeners' use. It is a main crop variety, fairly prolific, and has tapering ends. The color is a deep green and the lighter stripes which appear at the blossom end of most white spine cucumbers as they reach the slicing stage are distinctive in this variety; in that, they appear of a yellowish-green shade rather than fading out completely.



AFRICAN HORN

The African Horn is an unusual novelty but of no particular value. It has heavy, sharp spines which secrete a red fluid when broken, but there is no indication of red color within the fruit. The vines are vigorous; require a long growing period, and the leaves are very small. It is more closely related to the cucumber family.





**THE QUEEN OF
COLORADO**
(Deep Orange Flesh)

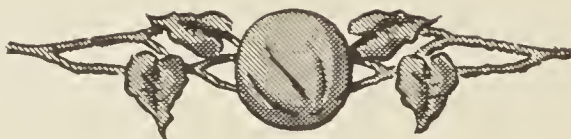
Size: 7 x 6½ inches

Weight: 4 pounds

Edible in 90 days

Principal uses: Home and
local markets

This is our development from the variety *Pride of Wisconsin*. It is a highly improved stock of uniform size and outstanding characteristics. The melon is rather large with faint ribs and a very heavy, coarse net that develops as the fruits reach maturity. The outside color is a pearly grey becoming golden yellow when ripe. The shell is unusually hard, the seed cavity very small and compact and it has high sugar content. The flesh is the thickest of any cantaloupe of its size, of an attractive deep orange color with a flavor that is the most distinctive of any cantaloupe. The edible qualities are truly delicious. The fruits remain edible for a number of days after having been fully vine ripened—in fact the eating qualities are improved after the fruits have been stored for a few days. As is customary with melons of this class they do require a long growing season. We believe the *Queen of Colorado* is superior to any other melon in its class and we recommend that it be featured in seed catalogs.



ABBOTT'S FAVORITE
(Pink Flesh)

Size: 5¼ x 5¼ inches

Weight: 3 pounds

Edible in 90 days

Principal use: Shipping

This is an attractive new shipping variety of Cantaloupe that has been developed at Rocky Ford, Colorado. It is of convenient size and shape for packing and will carry exceedingly well. It has indistinct stripes and a very heavy netting, with a hard shell of pearly grey color at maturity. The inside is an attractive dark pink color with thick flesh of high quality.





Muskmelon

(*French*, MELON; *Italian*, POPONE; *Spanish*, MELON; *Danish*, MELON;
German, MELONE)

The true Muskmelons belong to the genus, *Cucumis Melo*. The name Muskmelon is derived from the word musk, this term having reference to the delicious aromatic flavor of the melon. The name Cantaloupe comes from a town near Rome, Italy (Cantaloupo) to which the plant was first brought from its native home in Armenia.

In modern use the name cantaloupe applies primarily to those varieties with heavy netting and hard shell suitable for shipment to distant markets.

Muskmelons are one fruit that is eaten only when ripe and further, it is interesting to note that the melons invariably separate themselves from the plant at maturity, a characteristic of, perhaps, no other garden vegetable.

Columbus on his second voyage found melons "already grown, fit to eat, tho' it was not above two months since the seed was put into the ground." The first grown in the new world are to be dated March 29, 1494. In 1609, melons are mentioned by Hudson as found on the Hudson River. In 1683 some melon seeds were sown by the Spaniards on the Island of California. In 1881 muskmelons from Montreal appeared in the Boston market. It is reported that during the Civil War many farmers in the southern states made molasses and sugar from muskmelons and cantaloupes. In recent years some success has been recorded in using the melon hulls with corn for silage purposes, which is relished by most farm animals.

Muskmelons are cultivated in warm climates all over the world, but the fact that they do require a warm climate restricts their use somewhat. They require a warm soil and one in which their growth will be rapid. Muskmelons are not as susceptible as some of the other cucurbits to drought and certain of the plant diseases. In America the states of California, Arizona, Colorado, Maryland, Indiana, Arkansas and New Jersey are the leading production centers in the order named. The leading seed production area is in the irrigated valleys of Colorado where altitude and climate are ideal and where disease is not a serious problem. Harvesting is done by hand. The annual seed acreage in the United States is about 3000 acres, with a total seed consumption each year of about 750,000 pounds. From 30 to 40 melons yield a pound of seed and the return per acre is about 250 pounds. Among standard varieties each fruit contains an average of 450 seeds.

Some important progress has been made in combating one of the few serious diseases which affects melons. Namely, powdery mildew (see Plant Diseases) has been successfully checked in the western shipping sections by the perfection of strains which are able to withstand this disease. The process of waxing and pre-cooling fully vine-ripened melons for long distance shipping has added much to the quality of the pack.

Muskmelons have much the same food value as peaches and compare favorably with such table fruits as apples, pears and oranges. Their high water content makes them a valuable item of diet, as their agreeable taste and tempting appearance have a favorable effect on the appetite and digestion.

To differentiate between the colors of flesh we describe them as either "green flesh" or "pink flesh" although the color shades vary to a rather marked degree.





ACME OR BALTIMORE MARKET

(Green Flesh)

Size: $8\frac{3}{4}$ x $6\frac{1}{2}$ inches

Weight: 6 pounds

Edible in 90 days

Principle use: Home markets

A medium early variety of good size. It is heavily ribbed and fairly well netted. The shape is long with a distinct "neck" at the stem end. The eating qualities are good but this melon has been largely superseded by more desirable kinds.



BANANA (Pink Flesh)

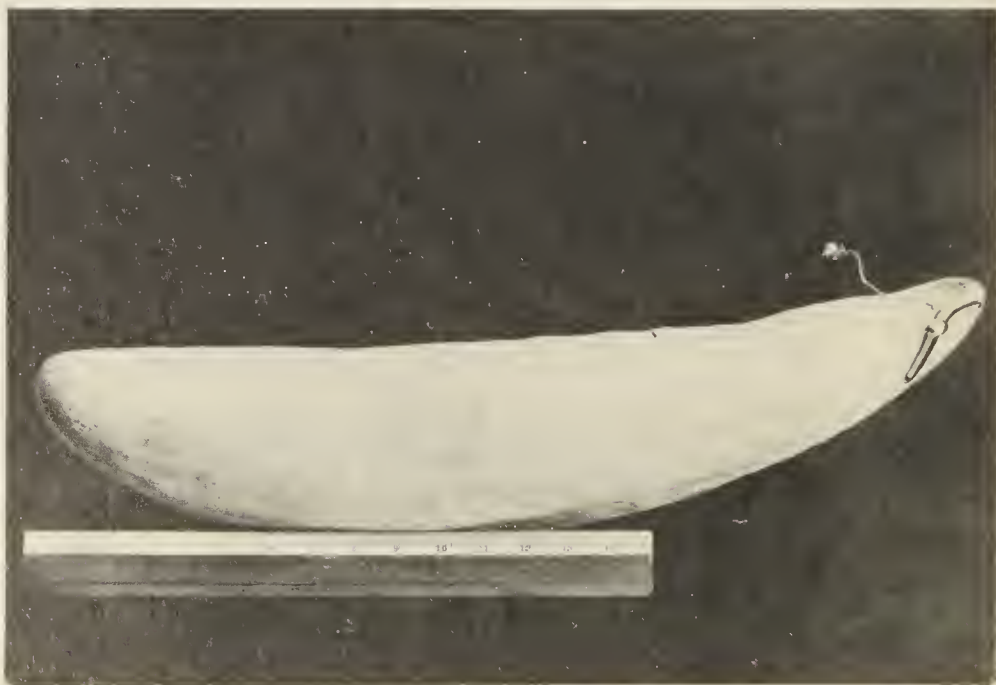
Size: $20\frac{1}{2}$ x 4 inches

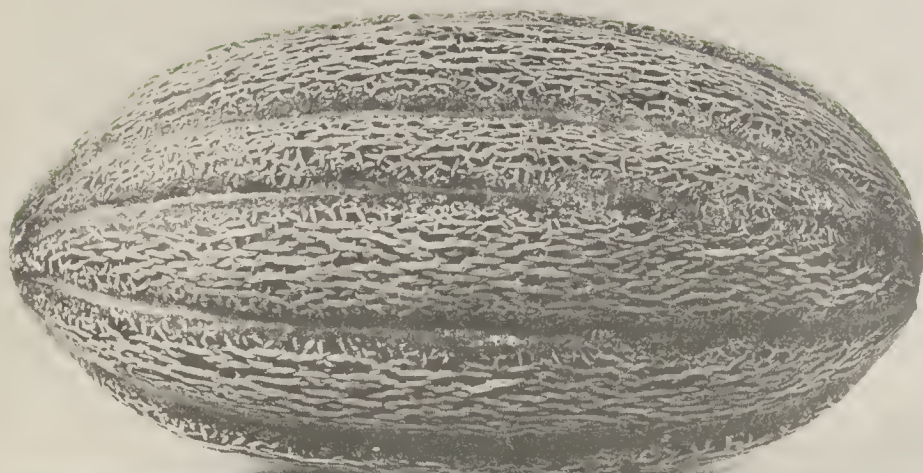
Weight: $7\frac{1}{2}$ pounds

Edible in 94 days

Principle use: Home market

An extremely long melon, tapering at both ends and usually curved at the stem end. It has lemon colored skin at maturity and grown under proper conditions is really delicious. Banana is a vigorous, hardy kind, and is rather late in maturing.





**BAY VIEW
(Green Flesh)**

Size: $11\frac{3}{4}$ x $6\frac{1}{4}$ inches

Weight: $7\frac{1}{2}$ pounds

Edible in 95 days

Principle use: Home market

An attractive muskmelon of good length which often attains a heavy weight. It is rather late in maturing and the edible qualities are fair, as the flesh is a little coarse. The netting is heavy, between distinct ribs; the ends taper and it is a main crop variety with considerable merit.



**BENDER'S SURPRISE
(Pink Flesh)**

Size: 8 x $7\frac{1}{2}$ inches

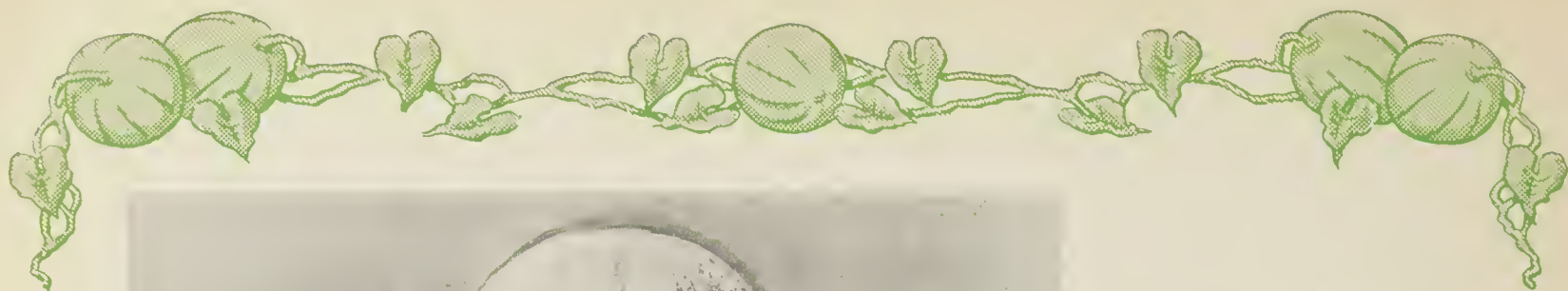
Weight: $9\frac{1}{4}$ pounds

Edible in 94 days

Principle use: Home market

The largest of the pink fleshed melons of oval shape. It is early for a melon of this size and the flesh is of exceptionally high quality. It has coarse netting, distinct ribs and the rind is very hard, enabling it to be shipped for some distance.





BOTTOMLY
(Green Flesh)

Size: 5 x 4½ inches

Weight: 2 pounds

Edible in 90 days

Principle use: Shipping

An early type of the spicy, green fleshed varieties, corresponding to Knight in general characteristics; except the shape which is nearly round with flattened ends. It is rather prominently ribbed, well-netted and a desirable kind for early markets.



**BURRELL'S GEM
OR DEFENDER**
(Pink Flesh)

Size: 8 x 5½ inches

Weight: 4½ pounds

Edible in 95 days

Principle use: Shipping

An oval pink fleshed melon with a very small triangular seed center. The ribs are not prominent, and the netting of the present day type is quite heavy. This melon has been increased in size over the original introduction. The flesh is very sweet and spicy, and of an attractive deep color; its shipping qualities are very good.





**BUSH (HENDERSON'S)
(Green Flesh)**

Size: $4\frac{1}{2}$ x 3 inches

Weight: 1 pound

Edible in 87 days

Principle use: Small gardens

A spicy little green flesh melon valuable in gardens where space is limited. It is early and an interesting novelty, produced on vines that seldom grow over 18 inches in length. The healthy vines bear a mass of luxuriant foliage and appetizing fruits.



**EARLY GREEN
NUTMEG OR PROLIFIC
NUTMEG**

(Green Flesh)

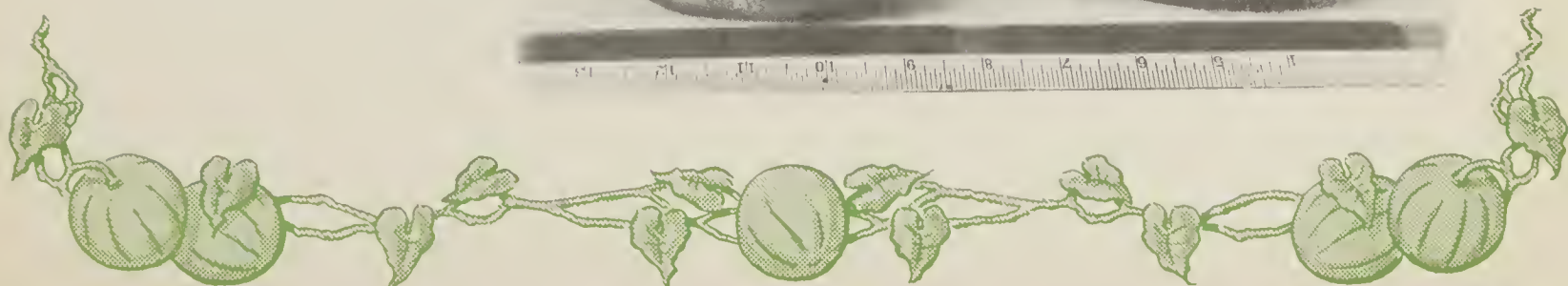
Size: 5 x $5\frac{1}{2}$ inches

Weight: $2\frac{3}{4}$ pounds

Edible in 88 days

Principle use: Home garden

The fruits are rather heavily ribbed and fairly well netted, the flesh is green, and it is very early. This is one of the most prolific muskmelons and is one of the oldest of the desirable varieties.





EDEN GEM (Green Flesh)

Size: $5\frac{1}{2}$ x 5 inches

Weight: $3\frac{3}{4}$ pounds

Edible in 87 days

Principle use: Shipping

A type of the green fleshed Rocky Ford but not quite as heavily netted. The shape is nearly round, and very uniform in size. The flesh is thick and firm which permits its being shipped long distances. The vines are rust resistant producing enormous crops.



EMERALD GEM (Pink Flesh)

Size: $4\frac{1}{2}$ x 5 inches

Weight: $2\frac{1}{2}$ pounds

Edible in 87 days

Principle use: Home garden

A small, smooth skinned variety, slightly ribbed; flat at the blossom end and tapering at the stem end. It is one of the oldest and best known varieties, retaining its popularity because of its luscious flavor and earliness. It should be picked when the skin is still green, when it parts readily from the vine, as it has no keeping qualities and must be consumed almost as soon as picked.





**EXTRA EARLY
HACKENSACK
(Green Flesh)**

Size: 5 x 6 inches

Weight: 2 $\frac{3}{4}$ pounds

Edible in 90 days

Principle use: Home garden

One of the most popular of the extra early green fleshed varieties. The shape of the melon is flat and the size is small, with distinct ribs and netting. The flesh is very sweet and spicy. Its early maturity permits it being grown in sections with a fairly short season.



**FORDHOOK
(Pink Flesh)**

Size: 3 $\frac{1}{2}$ x 4 $\frac{3}{4}$ inches

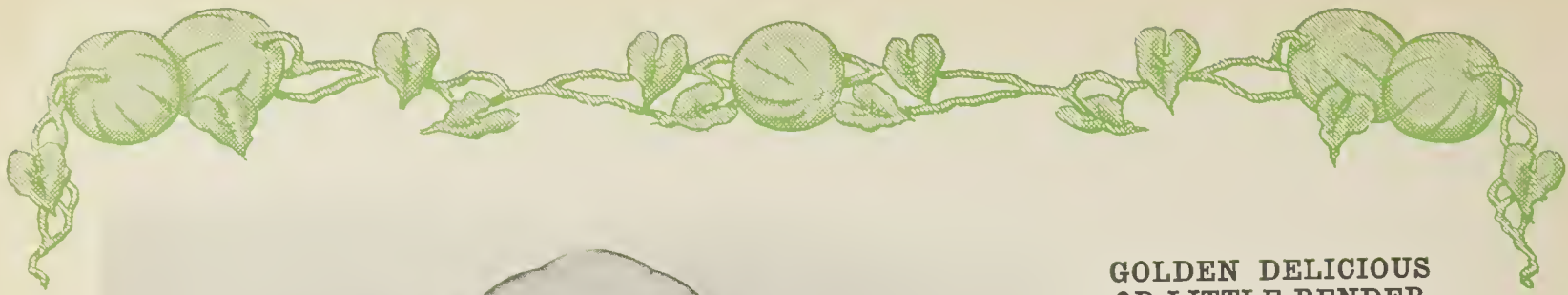
Weight: 1 $\frac{3}{4}$ pounds

Edible in 87 days

Principle use: Home garden

It is considered to be the best of the small, early pink fleshed muskmelons. The size is quite small and the shape is flattened, with prominent ribs and heavy net. Its sweet spicy flavor is unsurpassed.





**GOLDEN DELICIOUS
OR LITTLE BENDER
(Pink Flesh)**

Size: $6\frac{1}{2}$ x $6\frac{1}{2}$ inches

Weight: $5\frac{3}{4}$ pounds

Edible in 90 days

Principle use: Garden and market

A smaller, earlier type of the popular Bender's Surprise. The ribs are not heavy, the netting is fairly good over a hard rind, capable of carrying for considerable distances. The flesh is thick and of fine texture, and the size is more convenient than some of the larger melons.



**GREELEY WONDER
(Pink Flesh)**

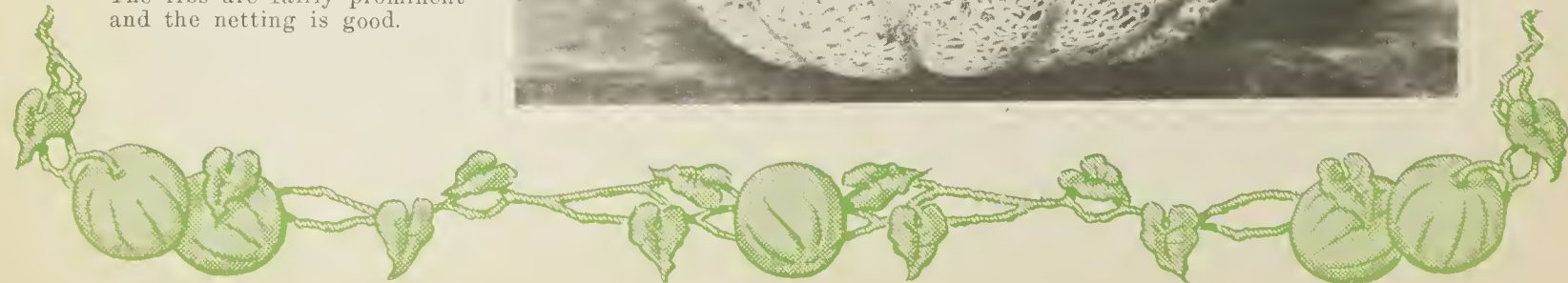
Size: $6\frac{3}{4}$ x $7\frac{3}{4}$ inches

Weight: $6\frac{3}{4}$ pounds

Edible in 90 days

Principle use: Home garden

A salmon flesh melon of large size and splendid eating qualities. There is a total absence of the coarse, stringy flesh often associated with large melons. This medium early variety was developed in Northern Colorado where it is a favorite for home gardens. The ribs are fairly prominent and the netting is good.





HACKENSACK LARGE

(Green Flesh)

Size: 6½ x 9½ inches

Weight: 8½ pounds

Edible in 94 days

Principle use: Home garden

A very large, green fleshed melon, quite flat in shape with prominent ribs and heavy netting. The flesh is remarkably thick, sweet and spicy. While a little late in maturing this melon is widely used and is both distinctive and valuable.



HALES BEST ORIGINAL OLD TYPE

(Pink Flesh)

Size: 7 x 6 inches

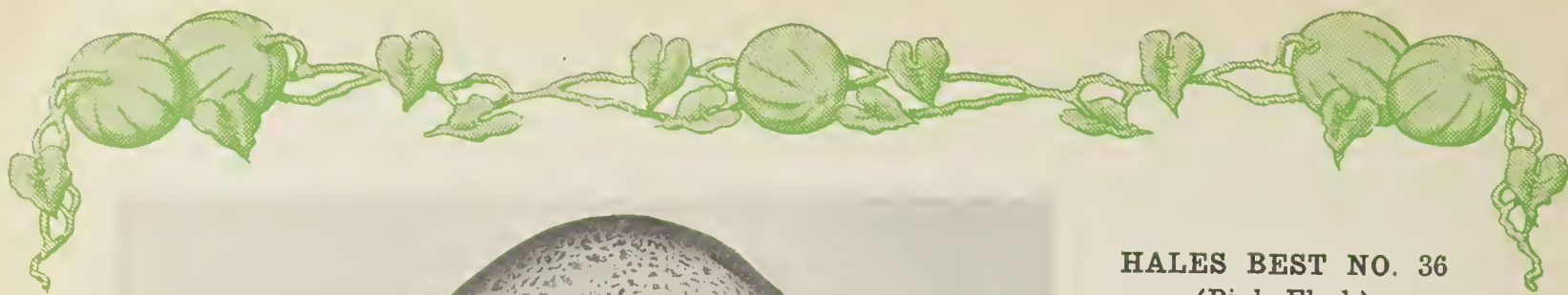
Weight: 4½ pounds

Edible in 85 days

Principle use: Market

A very desirable stock because of its size and earliness. It has been developed to a high degree of uniformity over the original introduction but is the melon from which all strains of H. B. have been developed. It does retain the general characteristics of the parent strain, being one of the earliest, the largest in size, oval in shape and plainly showing the wide stripes which denote earliness. It is heavily netted between the stripes, the flesh is thick, of excellent flavor and good color. Original H. B. is not designed for packing as it is too large, but is most popular for roadside market and trucking.





HALES BEST NO. 36
(Pink Flesh)

Size: $5\frac{1}{2}$ x $5\frac{1}{2}$ inches

Weight: 3 pounds

Edible in 85 days

Principle use: All-purpose

The Number 36 is now regarded as the improved Hales Best and is so used unless a definite choice is requested. It is desirable for any purpose; home garden, roadside stands and for shipment by truck, or packing for distant markets. The size is ideal, the net is heavy with just a faint stripe, the shape slightly oval and the flesh is very thick. It is about the most uniform stock of Hales Best.



HALES BEST NO. 112
(Pink Flesh)

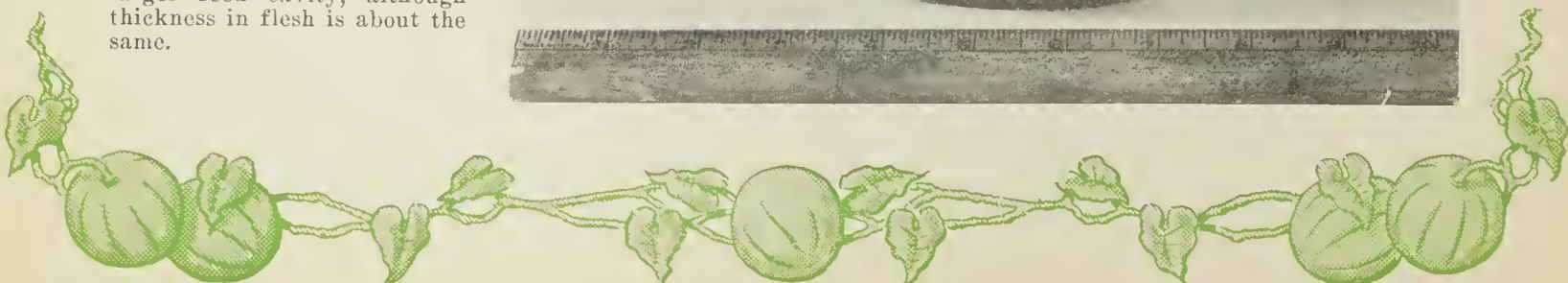
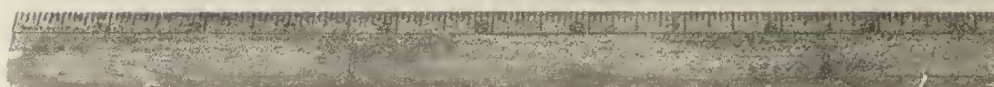
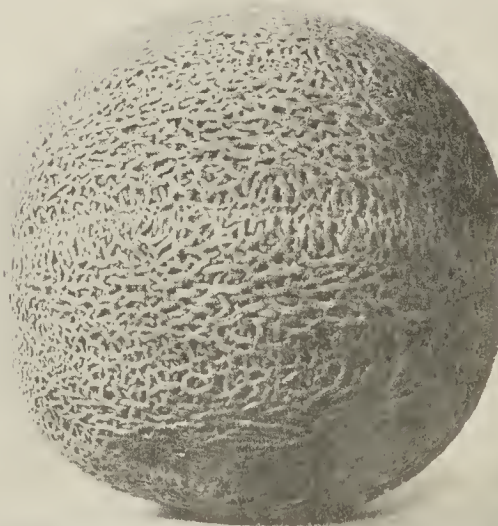
Size: $5\frac{1}{2}$ x $5\frac{1}{2}$ inches

Weight: 3 pounds

Edible in 87 days

Principle use: Shipping

This stock is almost identical to the Number 36 except in shape, being almost round instead of oval. The ends appear as slightly flattened. It is more desirable in some sections because of the shape. The netting does not seem quite as fine as that of the 36 type. Further, any melon of this shape is inclined to produce a larger seed cavity, although thickness in flesh is about the same.





HALES BEST NO. 936
(Pink Flesh)

Size: $6\frac{1}{4} \times 5\frac{3}{4}$ inches

Weight: 4 pounds

Edible in 87 days

Principle use: Market

Number 936 is a jumbo type of the 36 strain, being practically identical except in size. Its purpose is for those who desire a large melon of this type for the early market. It enjoys popularity during this time when jumbo sizes in musk melons are in demand, and in our opinion deserves wide use.



**HALES BEST MILDEW
RESISTANT NO. 45**

(Pink Flesh)

Size: 6 x $5\frac{1}{2}$ inches

Weight: 4 pounds

Edible in 86 days

Principle use: Shipping

A shipping variety scientifically designed for that particular trade. When powdery mildew became sufficiently serious in the districts which supply the distant markets to endanger the future of this industry, the plant breeders at the University of California set out to overcome the difficulty permanently. Dr. Jaeger and his associates developed a variety of stocks but this one approaches perfection in its class. All others have been virtually dropped. The No. 45 is a true Hales Best type of outstanding merit. It not only is resistant to mildew and the ideal melon for shipping but is rapidly becoming a leader in other sections wherever Hales Best is grown. The shape is oval, the size is medium with heavy net and a faint stripe which insures earliness. The inside is most attractive, with thick deep colored flesh and the seed cavity is almost as small as that of Perfecto. In our opinion it will eventually displace many of the other strains of Hales Best.





**HEARTS OF GOLD
IMPROVED
(Pink Flesh)**

Size: $5\frac{1}{2} \times 5\frac{1}{2}$ inches

Weight: 3 pounds

Edible in 88 days

Principle use: Shipping

The Improved Hearts of Gold has been developed from the original Hoo Doo. It is now a most desirable melon for shipping as well as general purposes. The fruit is well netted except a narrow stripe between shallow ribs; very firm with deep golden flesh of the finest quality.



**HEARTS OF GOLD,
MORRILL STRAIN**

(Pink Flesh)

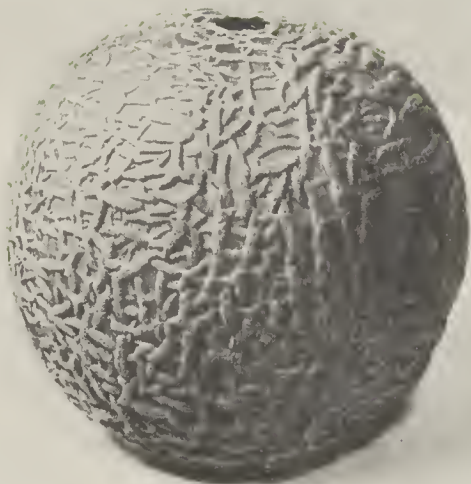
Size: $6\frac{1}{2} \times 5\frac{3}{4}$ inches

Weight: 4 pounds

Edible in 88 days

A jumbo Hearts of Gold which is otherwise identical to this variety. It has proven desirable where larger melons are required and is an excellent stock in every respect. The strain was developed in Michigan.





**HONEY ROCK OR
SUGAR ROCK
(Pink Flesh)**

Size: 5½ x 5½ inches

Weight: 3 pounds

Edible in 85 days

Principle use: Home market

This popular melon received all-America distinction for 1933. It has maintained a place among the leaders ever since its introduction and is one of the best of the pink fleshed sorts. The rind is tough and hard, covered with a distinctive, rope-like netting. The flesh is of a deep salmon color, fairly thick and very sweet. It is not adapted for shipping any great distances.



**HONEY DEW
(Green Flesh)**

Size: 7½ x 7 inches

Weight: 6½ pounds

Edible in 110 pounds

Principle use: Shipping

The green meated Honey Dew which very likely is of African origin is one of the parents from which all of the white melons have been derived. Many crosses and selections have been made in recent years but few of them have proven highly desirable for an appreciable length of time. Honey Dew requires a long growing season and does not thrive in some parts of America; it is, however, a delicious variety. The outside color is white with some net, ripening to a light cream color. The rind is smooth and hard, suitable for long distance shipping, and with excellent keeping qualities. The thick green flesh is sweet and tender.





HONEY DEW (Pink Flesh)

It is identical to Green Honey Dew except the flesh is pink. The shape is nearly round and it may average a trifle smaller in size, and a little earlier in maturity.



HONEY DEW GOLD RIND

(Green Flesh)

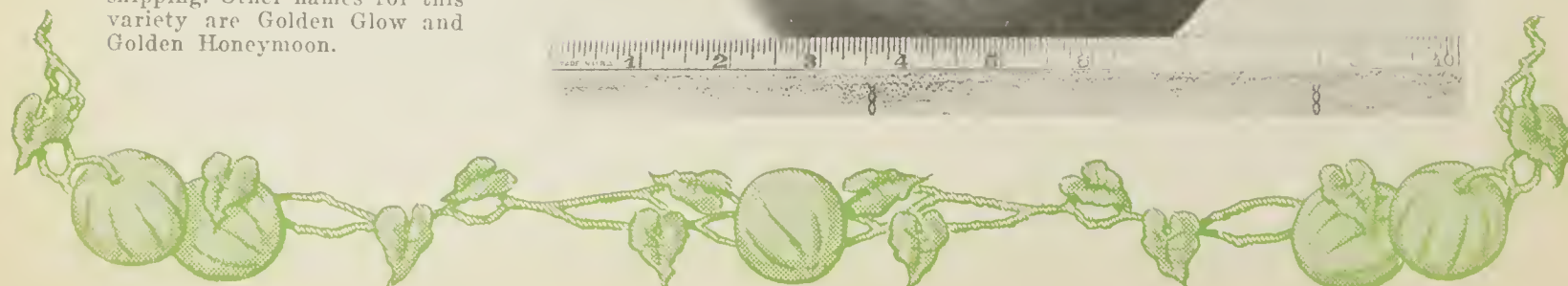
Size: 7 x 6 $\frac{7}{8}$ inches

Weight: 5 $\frac{1}{2}$ pounds

Edible in 100 days

Principle use: Shipping

A true Green Flesh Honey Dew except when about two-thirds grown the outside coloring turns to an attractive golden shade. It withstands heat in that the fruits do not show sunburn because of the color. It has good flavor, a thick flesh and carries well in shipping. Other names for this variety are Golden Glow and Golden Honeymoon.





HONEY DEW NO. 60 (Green Flesh)

Size: 7 x 6½ inches

Weight: 4½ pounds

Edible in 110 days

Principle use: Shipping

This type of the Honey Dew has been developed for resistance to mildew. Its appearance is very much the same as that of the regular Honey Dew but the size averages somewhat smaller. The skin is somewhat roughened and the color is pure white. It is not desirable, in our opinion, except where the powdery mildew disease is serious.



HONEY BALL (Green Flesh)

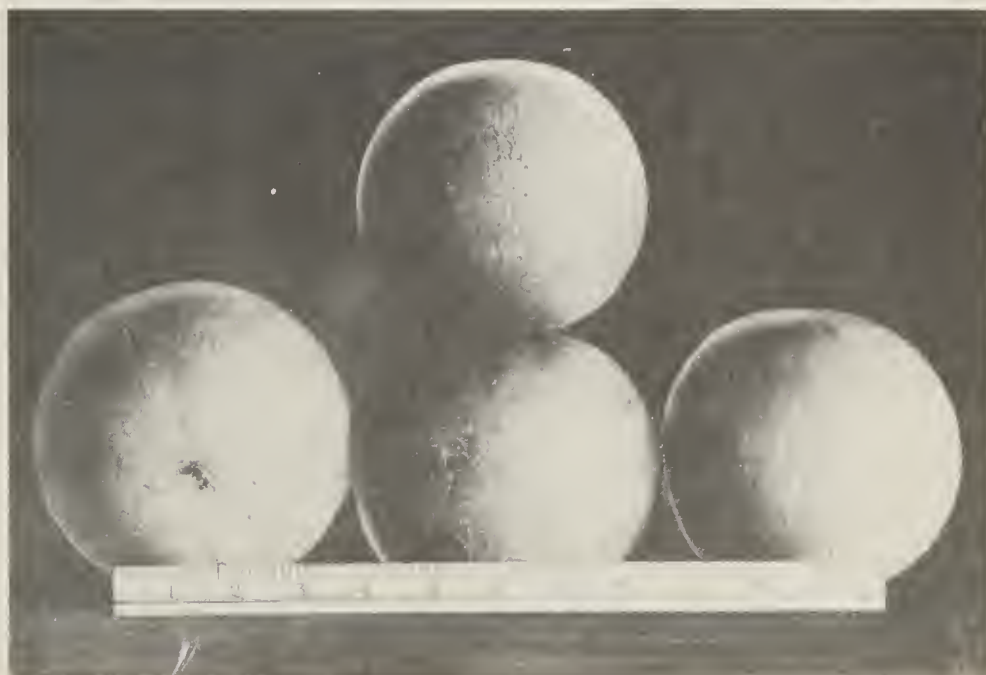
Size: 5 x 4½ inches

Weight: 3 pounds

Edible in 105 days

Principle use: Shipping

Like the Honey Dew, from which it is derived, it keeps well and is an excellent shipper. The other parent is Texas Cannon Ball. The melons are white with heavy netting and hard rind. The flesh is very thick, green in color and edible to the rind. Honey Ball has a sweet, spicy flavor somewhat similar to that of the early green fleshed muskmelons.





IMPERIAL SPECIAL (Pink Flesh)

Size: $5\frac{1}{2} \times 5\frac{1}{2}$ inches

Weight: 3 pounds

Edible in 95 days

Principle use: Shipping

Also known as Weaver Special and Sunkist; this variety won all-America distinction in 1935. It is a white melon of the Honey Dew family. The shape is perfectly round, covered with heavy netting. The flesh, of a bright golden color, is very thick and fine flavored. This variety is early, maturing satisfactorily in the northern states, and carries well after having been fully vine-ripened.



IMPROVED YELLOW CANTALOUPE (Pink Flesh)

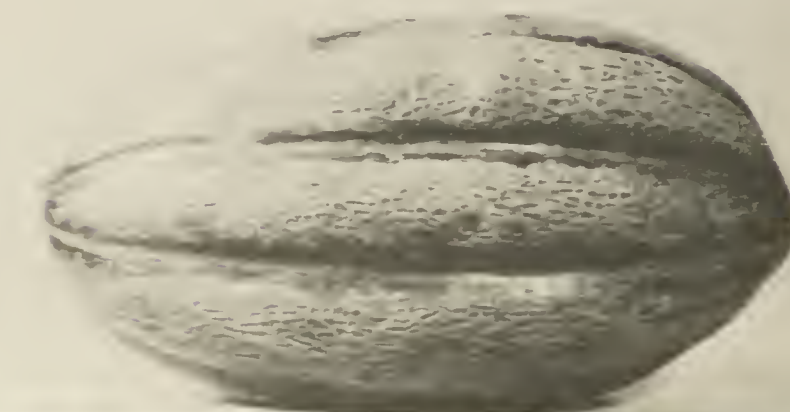
Size: 11×7 inches

Weight: 6 pounds

Edible in 94 days

Principle use: Home market

A very large melon, heavily netted between prominent ribs. It is one of the largest of the pink-fleshed sorts and is exceptionally sweet and spicy. However, it has no shipping qualities and must be consumed soon after picking. It is large for its size but not widely used.





JENNY LIND
(Green Flesh)

Size: $3\frac{1}{2} \times 4\frac{1}{2}$ inches

Weight: $1\frac{1}{2}$ pounds

Edible in 87 days

Principle use: Home garden

A small, flat melon, very early in maturing. The netting is quite heavy between indistinct ribs and it is inclined to produce a "button" on the blossom end.



KNIGHT
(Green Flesh)

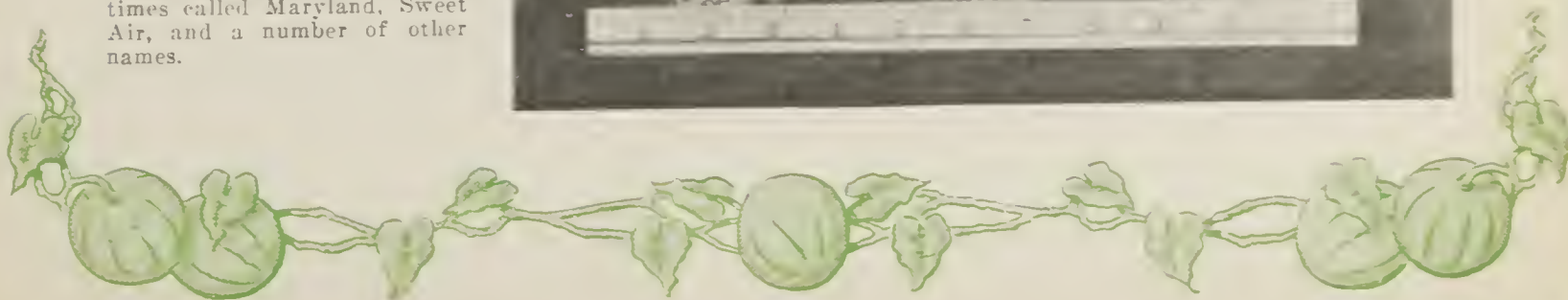
Size: $5\frac{1}{2} \times 4\frac{1}{2}$ inches

Weight: $1\frac{1}{2}$ pounds

Edible in 87 days

Principle use: Home markets

One of the early types of the small, oval shaped muskmelons. The ribs are indistinct and the netting is rather heavy. It is pointed or shows a "neck" at the stem end and the vines are very productive. This melon is famous for its sweet, spicy flavor and can be shipped a moderate distance without damage. It is sometimes called Maryland, Sweet Air, and a number of other names.





LAKE CHAMPLAIN
(Pink Flesh)

Size: $5\frac{1}{2}$ x 6 inches

Weight: 4 pounds

Edible in 82 days

Principle use: Home garden

A medium sized melon, chiefly of value because of its extreme earliness. It is moderately netted and the ribs are fairly prominent. The melon is of average quality and it ripens along with the very earliest kinds in the most northerly sections where melons can be produced. It is also called Golden Champlain.



MILWAUKEE MARKET
(Pink Flesh)

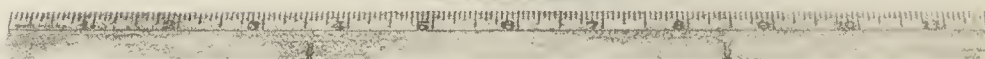
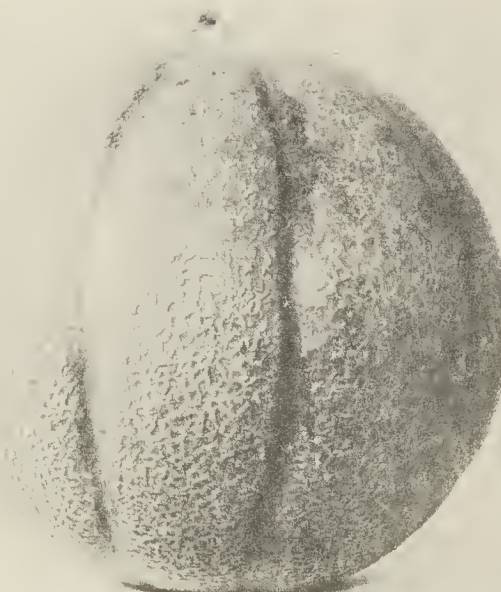
Size: $6\frac{1}{2}$ x 7 inches

Weight: 6 pounds

Edible in 87 days

Principle use: Home garden

A medium large melon with excellent eating qualities. The ribs are fairly prominent, the netting heavy over a hard rind, enabling it to carry well for reasonable distances. The flesh is extremely thick and of a rich, deep pink color. The shape is almost round with slightly flattened ends and this variety produces heavy yields.





MONTREAL MARKET
(Green Flesh)

Size: $8\frac{1}{2}$ x 7 inches

Weight: 6 pounds

Edible in 94 days

Principle use: Home garden

An extremely large variety with deep ribs and heavy netting. While it is rather late in maturing this melon is very prolific and has good quality. The fruits sometimes attain enormous size, growing to 12 pounds or more. It is also called Montreal Nutmeg.



NETTED GEM
(BURPEE'S)
(Green Flesh)

Size: $4\frac{1}{2}$ x $4\frac{1}{2}$ inches

Weight: $1\frac{1}{2}$ pounds

Edible in 87 days

Principle use: Home garden

This is the original parent of all of the present day strains of Rocky Ford cantaloupes. It is comparatively small in size, very early and productive, with spicy flavor. The shape is nearly round and the netting is quite heavy between distinct stripes.





OHIO SUGAR (Green Flesh)

Size: $7\frac{1}{4} \times 6\frac{1}{2}$ inches

Weight: 6 pounds

Edible in 95 days

Principle use: Home garden

It is almost identical to Tip Top except a little longer and the flesh is green. It is probably one of the best in its class among the green fleshed varieties.



OSAGE OR MILLER'S CREAM (Pink Flesh)

Size: $7 \times 6\frac{1}{2}$ inches

Weight: 5 pounds

Edible in 92 days

Principle use: Home garden

It is oval or egg shaped with indistinct ribs and a trace of netting. The skin is dark green when immature ripening to a mottled orange and green. The seed cavity is small, the flesh unusually thick and firm, enabling it to carry for some distance. It has a spicy flavor and continues to enjoy wide use as an all-purpose variety. The EXTRA EARLY OSAGE is identical except that it is slightly smaller and about a week earlier in maturing.





PAUL ROSE
(Pink Flesh)

Size: 6 x 4½ inches

Weight: 3 pounds

Edible in 88 days

Principle use: Home garden

A medium size melon of the Osage type. It might be called a small Osage. The shape is oval; the quality is good, and it ripens very early. The seed cavity is small and triangular, with thick flesh.



PEARL PINK MEAT
(Pink Flesh)

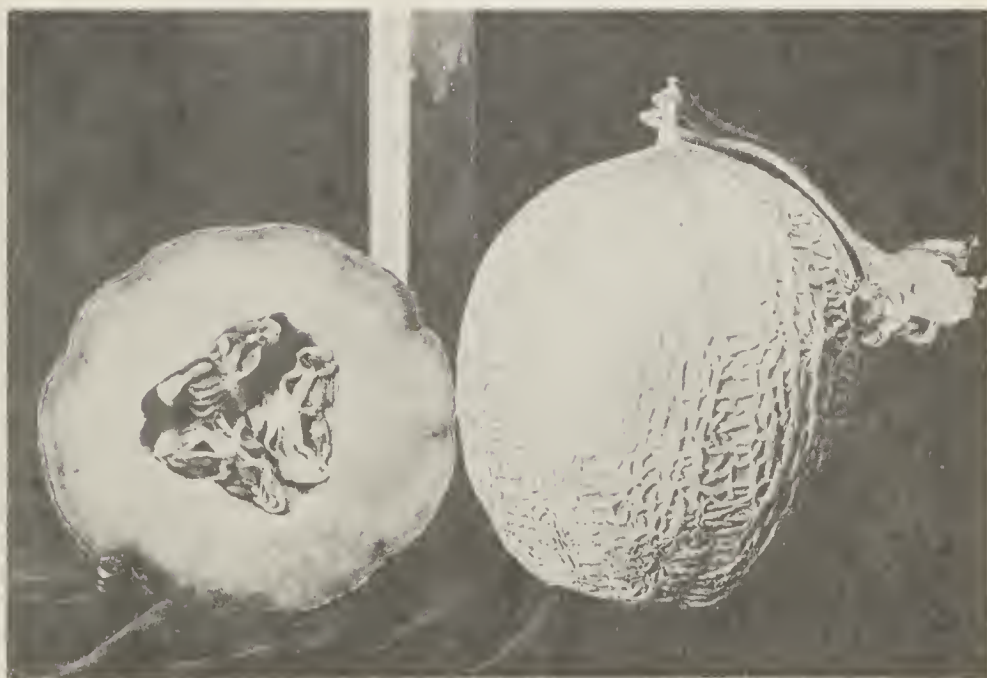
Size: 6 x 4½ inches

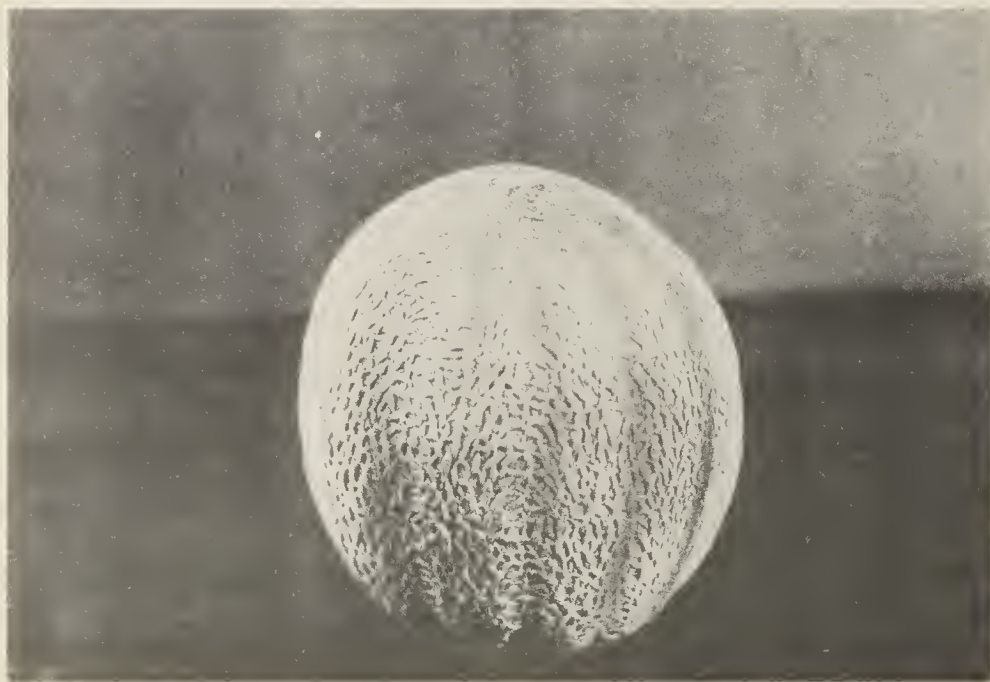
Weight: 2½ pounds

Edible in 95 days

Principle use: Shipping

The netting is very coarse and heavy, and the hard rind is a beautiful shade of pearl, making an attractive outside appearance. The flesh is thick and deeply colored with a triangular seed cavity. Its shipping qualities are excellent.





**PEERLESS PEARL
WHITE SEEDED
(Pink Flesh)**

Size: $6\frac{1}{2}$ x $5\frac{1}{4}$ inches

Weight: $3\frac{3}{8}$ pounds

Edible in 95 days

Principle use: **Shipping**

It corresponds very closely to Pearl Pink Meat except the netting is somewhat more compact and the seeds are pure white. The seeds are small, rounded at the ends, and light in weight.



**PERFECTION OR
PRINCESS
(Pink Flesh)**

Size: $7\frac{1}{2}$ x 7 inches

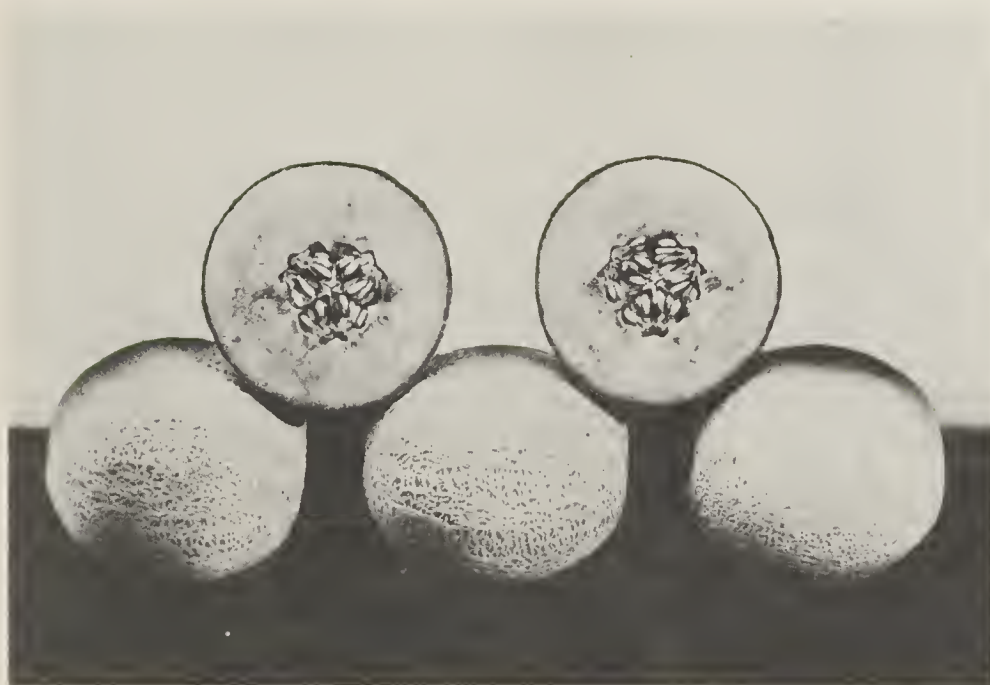
Weight: 6 pounds

Edible in 95 days

Principle use: **Home garden**

A thick fleshed melon with sweet, spicy flavor. The shape is slightly oval with rather heavy ribs and netting. It is a little late in maturing and while not a good shipper it does remain edible for several days.





**PERFECTO IMPROVED
OR SUPERFECTO
(Pink Flesh)**

Size: $5\frac{1}{2} \times 5$ inches

Weight: 3 pounds

Edible in 92 days

Principle use: Shipping

Perfecto is one of the best cantaloupes for the late shipping market. The size is uniform with but a slight trace of stripe and solid net. The fine grained orange flesh is very thick and this melon has about the smallest seed cavity of any variety. This kind is late in maturity as compared to many of the other shipping kinds but its attractive appearance and excellent flavor are among the best.



**PERFECTO IMPROVED
JUMBO STRAIN
(Pink Flesh)**

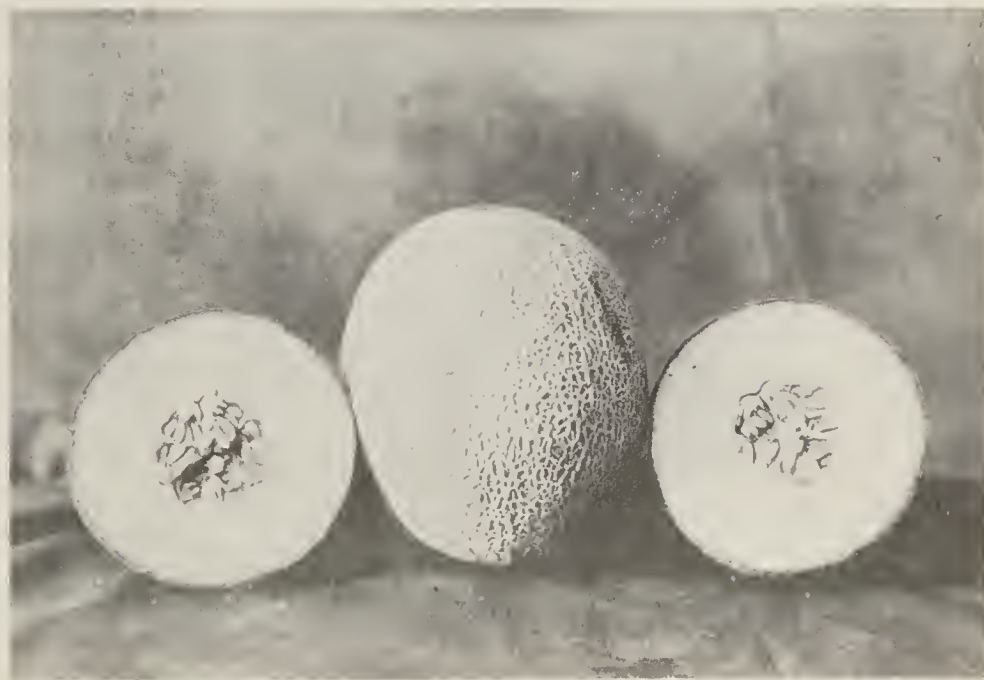
Size: $6\frac{1}{2} \times 5\frac{1}{2}$ inches

Weight: $3\frac{3}{4}$ pounds

Edible in 92 days

Principle use: Shipping

The jumbo strain of Perfecto has been developed to meet the demand for a larger market type. It is in all respects identical to the original stock except in size and is more desirable, especially for local market purposes.





POLLACK 10-25 (Salmon Flesh)

Size: $5\frac{1}{2} \times 5$ inches

Weight: $2\frac{1}{2}$ pounds

Edible in 95 days

Principle use: Shipping

It is identical to Rocky Ford except the flesh is salmon tinted instead of green. The fruits are very uniform, heavily netted with no trace of ribs, and the vines are rust resistant. At one time it was used almost exclusively for long distance shipping, but now has been largely superseded by the Hales Best strains and other newer introductions for this purpose.



PRIDE OF WISCONSIN (Pink Flesh)

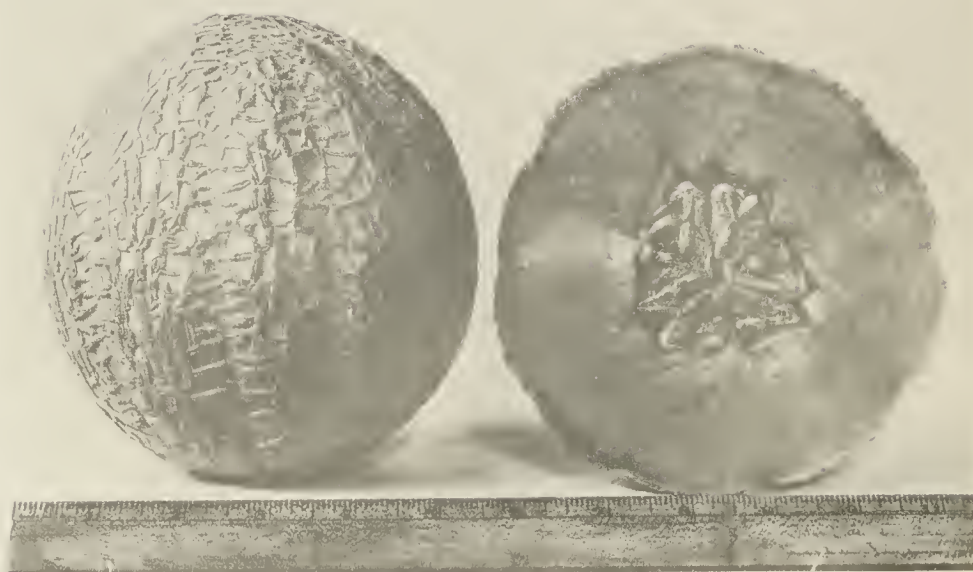
Size: $6\frac{1}{2} \times 6$ inches

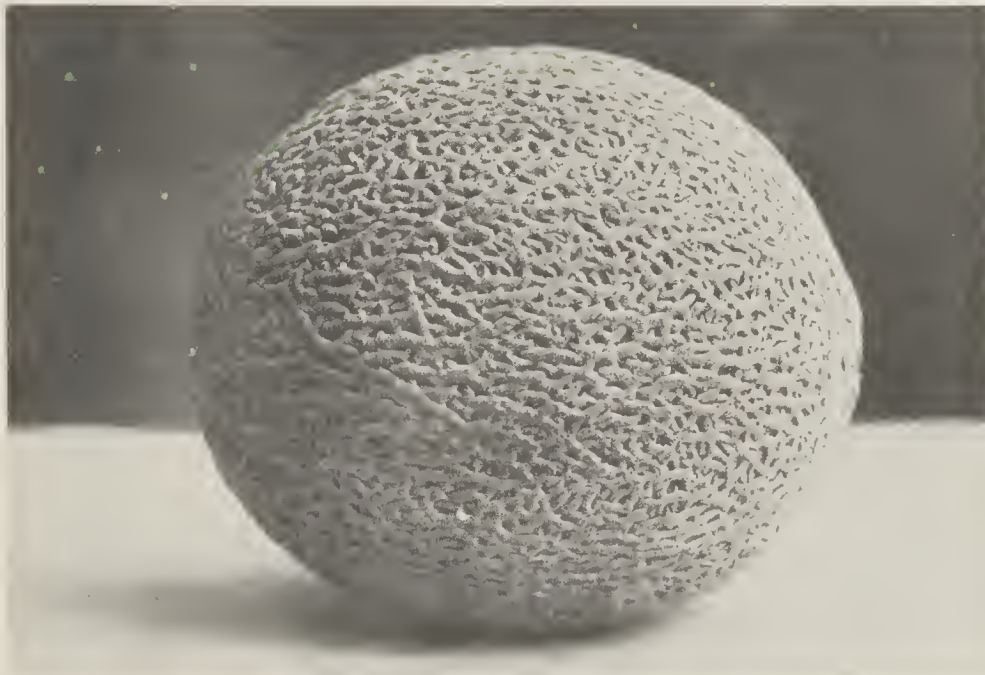
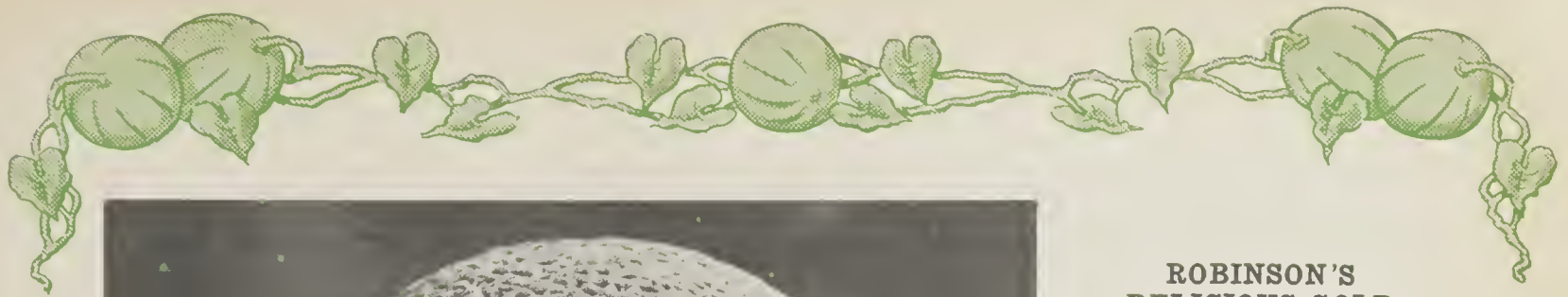
Weight: $3\frac{3}{4}$ pounds

Edible in 90 days

Principle uses: Home garden
and market

A new introduction which appears to have considerable merit. It is a most attractive fruit both on the outside and when cut. The rind is very hard, of a pearly gray color, with but a faint rib, heavily covered with a distinctive netting. It ripens to a yellowish shade. The flesh is unusually thick with good flavor and the triangular seed cavity is almost compact. This new variety seems to include many of the desirable characteristics of the Honey Rock with the added feature of thick flesh which does not soften prematurely as it approaches maturity. Hence, in our opinion, it will carry well in shipping.





**ROBINSON'S
DELICIOUS GOLD
LINED ROCKY FORD
(Green Flesh)**

Size: $5\frac{1}{2} \times 5\frac{1}{2}$ inches

Weight: $2\frac{1}{2}$ pounds

Edible in 95 days

Principle uses: Home garden
and market

This excellent stock of the Rocky Ford type has spicy green flesh with a gold lining next to the seed cavity. It is otherwise quite similar to the Rocky Ford in general appearance and use. For sweetness and spicyness this popular variety is unexcelled.



**ROCKY FORD
(Green Flesh)**

Size: $5\frac{1}{2} \times 5$ inches

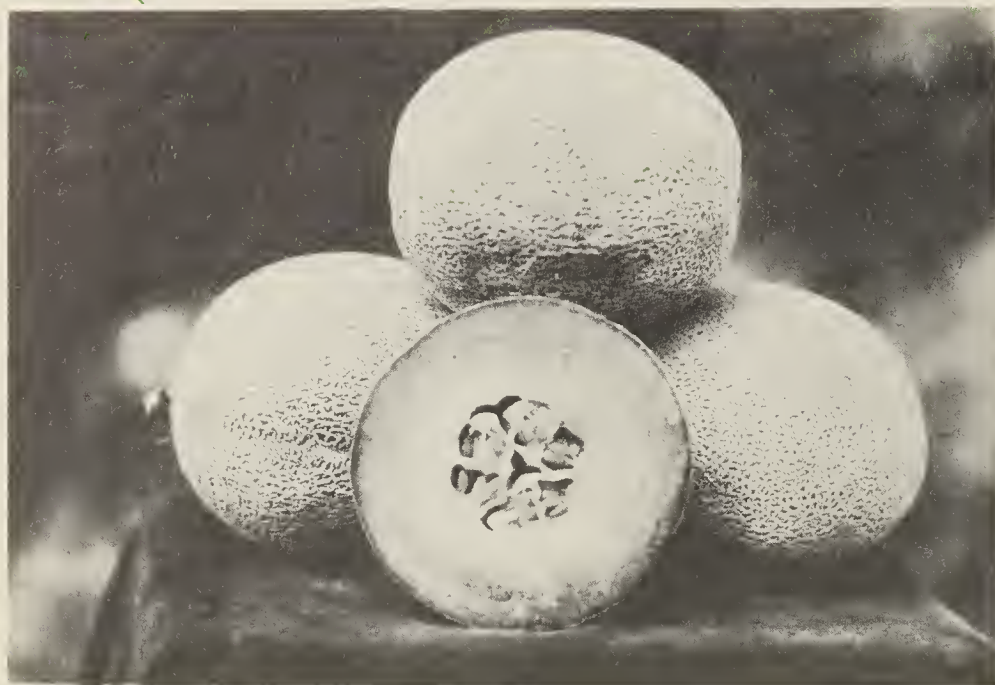
Weight: $2\frac{1}{2}$ pounds

Edible in 95 days

Principle uses: Home and
market

The Rocky Ford continues to be a leader among melons of its class. It has enjoyed wide use for many years and is well known everywhere that melons are produced. It is popular chiefly because of its extraordinary flavor. The spicy flavor of the green fleshed Rocky Ford melons is difficult to improve upon.





**ROCKY FORD
RUST RESISTANT
(Green Flesh)**

It is identical to Rocky Ford except the vines are more resistant to rust. A highly desirable strain with the same maturity dates, size and weight as the Rocky Ford.



**SHUMWAY'S GIANT
(Pink Flesh)**

Size: $8\frac{1}{2} \times 9\frac{1}{2}$ inches

Weight: 10 pounds

Edible in 94 days

Principle use: Home garden

Among the largest of the pink fleshed muskmelons, it is deeply ribbed with a fine netting. The shape is flattened on the ends and the size often exceeds that shown in our description. The skin is green when immature, turning to a lemon color as it ripens, and the seeds are of extraordinary size.





TEXAS CANNONBALL
(Green Flesh)

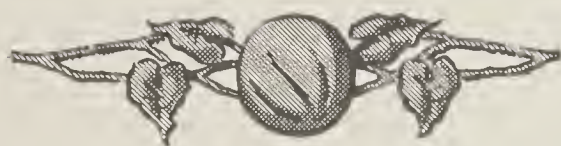
Size 6 x 5 $\frac{1}{4}$ inches

Weight: 3 $\frac{1}{4}$ pounds

Edible in 95 days

Principle use: Local markets

A hard, green skinned variety, well covered with netting, and with no trace of ribs. It is early and its most remarkable feature is the thickness of the flesh, which has the spicyness of others of the green fleshed kinds.



TIP TOP
(Pink Flesh)

Size: 7 x 6 $\frac{1}{2}$ inches

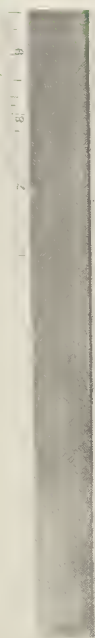
Weight: 6 $\frac{1}{2}$ pounds

Edible in 96 days

Principle use: Local markets

It has long been a favorite for home and local markets. The eating qualities are of the best and the size is ideal for its purpose. There is a moderate amount of netting over indistinct ribs and the melons are somewhat wider at the top or stem end, hence the name, which indicates a top shape. The flesh is thick and of a rich salmon color.





GOLDEN BEAUTY

Size: 8 x 7 inches

Weight: 6 pounds

Edible in 105 days

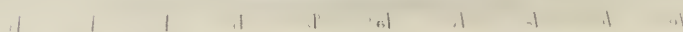
Principle uses: Local market
and shipping

The most popular of the casabas, this variety has a beautiful golden color when mature, with a wrinkled skin. The flesh is white in color, very sweet and spicy. The casabas are of tropical origin and will not reach perfection except in the South, where the seasons more closely correspond to their growing habits. Properly stored they will remain edible for months.



GOLDEN HYBRID

An improved type of bright golden color, used almost exclusively in California. It is a trifle larger but otherwise similar to Golden Beauty.





PERSIAN

Size: $7\frac{1}{2} \times 7\frac{1}{2}$ inches

Weight: 7 pounds

Edible in 102 days

Principle use: Shipping

While not properly a casaba, the Persian is also of tropical origin. It is of dark color and completely covered with a fine netting. The flesh is extremely thick, of excellent flavor and pink in color. There is an older type of this variety known as Large Persian which attains more size, often growing to 10 pounds in weight.



PINEAPPLE

The same growing habits and about the same size as the other casabas, the Pineapple is distinctive in that its wrinkled skin is a mottled white and green when mature. It is very productive and fully equal to Golden Beauty in its edible qualities.

IMPROVED HYBRID

A little similar to the other casabas, this variety is not widely used, but is an excellent kind. Practically the same as Golden Beauty in size, weight, etc.

SANTA CLAUS

Size: $12 \times 6\frac{1}{4}$ inches

Weight: 9 pounds

Edible in 110 days

Principle use: Local markets

It is a long fruit with gold and dark green mottling, and a trace of net. The flesh is light green in color and of typical casaba flavor. As the name indicates it is often stored for late season use.





**ORNAMENTAL
POMEGRANATE
OR QUEEN ANNE'S
POCKET MELON**

Size: $2\frac{1}{4} \times 2\frac{1}{4}$ inches

Weight: 4 ounces

It is a novelty which matures in about the same time as muskmelons. The color is orange with stripes and mottlings of white. The flesh is soft and white in color. It is not of much edible value but is very highly scented. The fragrance is very pleasant and it is useful to store among cantaloupes to which it imparts its fragrance.



**VINE PEACH OR
MANGO MELON**

Size: $3 \times 3\frac{1}{2}$ inches

Weight: 8 ounces

Matures in 90 days

Principle uses: Preserving and pickling

It is identical to VEGETABLE ORANGE, GARDEN LEMON and GLASS MELON. The fruits are very small and enormously productive. The color is light orange with flecks or stripes of brown, and the seeds are very small. It is used for preserving and also the young fruits are used for pickling when small and green.





GOLDEN MARVEL

(Pink Flesh)

Size: 8 x 7 inches

Weight: 7½ pounds

Edible in 90 days

Principal use: Local markets

A very promising new development among the larger melons. This large sized fruit with heavy rind and good keeping qualities is proving a favorite on local markets. The outside color is grey turning to yellow at maturity and the coarse netting appears as the melons become ripe. The flesh is dark pink, very thick and firm in texture. The edible qualities are good. It is especially adapted for use under unfavorable growing conditions and is a stock that can well replace older varieties in muskmelons of large size.



LARGE JENNY LIND

(Green Flesh)

Size: 4½ x 5 inches

Weight: 2 pounds

Edible in 87 days

Principal use: Home garden

A spicy, green fleshed melon attaining considerable more size than the original Jenny Lind. It carries rather a deep stripe between heavy netting. The early melons are especially desirable for home garden and near-by markets. The increased size of this strain adds to its popularity.





NEW SEED BREEDERS (Pink Flesh)

Size: $5\frac{1}{2} \times 5\frac{1}{4}$ inches

Weight: 3 pounds

Edible in 84 days

Principal use: Shipping

A new development in a shipping type of Hales Best Cantaloupe. It has been developed primarily for its uniformity and it is claimed that this stock will out-yield other Hales Best strains about 25% because of fewer cull melons. A report from State Experiment Stations indicates that the new Seed Breeders is about three days earlier than any other Hales Best strain. It resembles the No. 36 Hales Best in general appearance except, perhaps the flesh is a darker shade of pink. It was developed by the Rocky Ford Cantaloupe Seed Breeders Association.



WOODSIDES WINNER (Pink Flesh)

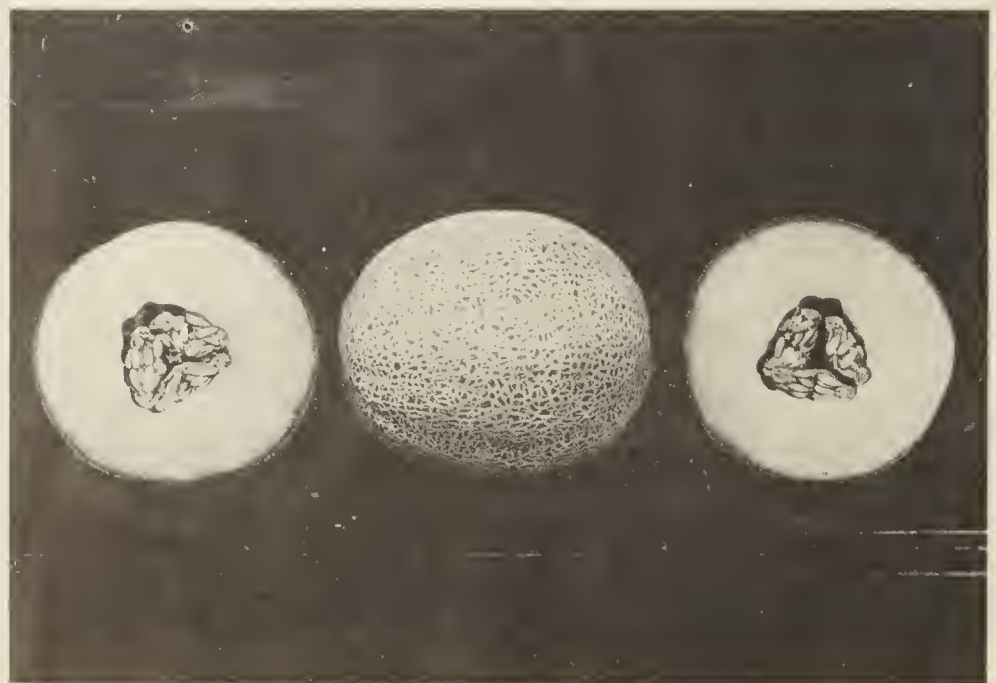
Size: $5\frac{1}{4} \times 5\frac{1}{4}$ inches

Weight: $2\frac{3}{4}$ pounds

Edible in 85 days

Principal use: Shipping

A small, early, uniform stock of the Hales Best type developed at Rocky Ford, Colorado in recent years. It is of ideal size for packing and shipping and carries equally well in comparison with other melons of its class. It is heavily netted and the flesh is perhaps thicker than in some of the other stocks of Hales Best.





Watermelon

(*French*, MELON D'EAU; *Italian*, MELONE D'AQUA; *Spanish*, SADIA;
Danish, VANDMELON; *German*, WASSER-MELONE)

Watermelons are members of the Gourd family and of the genus, *Citrullus Vulgaris*. They were known before the Christian Era and were originally found in tropical and Southern Africa. It is said to be one of the fruits of Egypt which the Jews regretted in the wilderness. The watermelon still forms the chief food and drink of the inhabitants of Egypt for several months of the year.

Watermelons are mentioned as abounding in Massachusetts in 1629. In 1673, Father Marquette, who descended the Wisconsin and Mississippi Rivers, speaks of melons, "which are excellent, especially those with a red seed." In 1799 watermelons were raised by the tribes on the Colorado River. They are now cultivated throughout the warmer regions of the globe. They thrive in light, sandy loam, well drained, well fertilized and unshaded. Florida, Georgia, Texas, South Carolina, California and Missouri are the leading states in watermelon production in the order named.

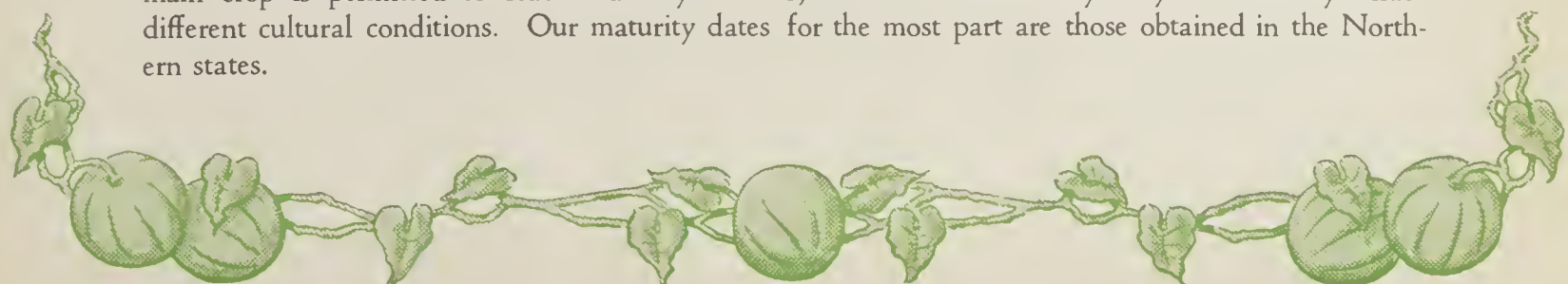
Seed production is chiefly in the Southern and Western states. Six to eight fruits produce a pound of seed and the annual production of seed in the United States is about 750,000 pounds. Some 4000 to 5000 acres is required for this yield. The average watermelon contains about 225 seeds. Watermelons range in size from about six inches in diameter to well over 100 pounds in weight. Early writers state that the size is sometimes so great that a man can scarcely embrace the fruit with his expanded arms. The fruits vary in shape from round to oblong and in color from light green to almost a black, self-colored or striped with paler green or marbled. The flesh may be cream-colored, honey-colored, pale red, red or scarlet. The seeds are white, white with dark markings and various shades of brown, red and black.

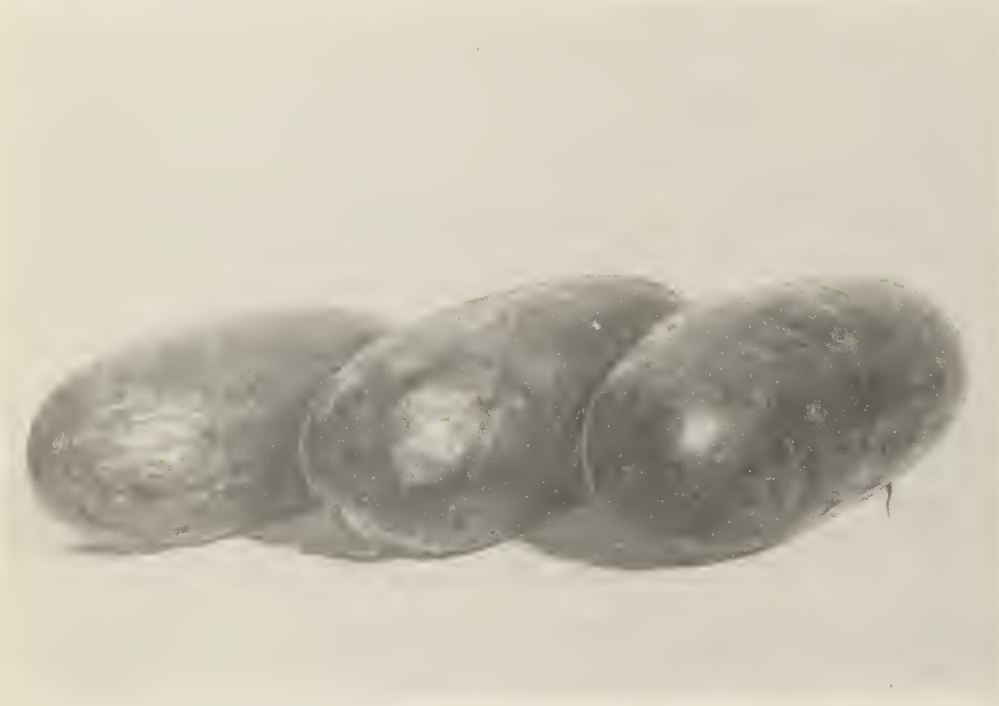
While of little actual food value, watermelons are among the most delicious and appetizing of the vegetables.

In recent years an increasing necessity has arisen for types with resistance to common diseases. Especially, *Fusarium Wilt* (see Plant Diseases) which has become quite generally prevalent wherever watermelons have been grown over a period of time. A serious disease which can be successfully combated only with types that are immune. Our standard kinds will likely be most completely replaced in the course of time but plant development of this kind is slow and intricate. Contrary to general belief, it is not necessary that the true wilt resistant strains must be grown continuously on wilt infested soil to retain that characteristic. The characteristic is hereditary and does not readily disappear.

Unfortunately many of the important watermelon sections are located where citrons are a native wild plant. The citron plant cannot be readily recognized by the average grower and the damage has been done when the fruits have developed far enough to be determined; i.e., cross-pollination with the watermelon blossom has occurred and when seed from this cross is planted the damage does not become apparent until the following year. The citron blood is dominant in the first generation and recognized by hard, white flesh in the fruits. These are not edible and often lead to a lack of understanding as to their origination. This trouble should not be confused with the hard centers which sometimes occur in watermelons and which, very likely, are caused by some local growing condition or are common to the variety.

The sizes and weights of watermelons which appear with our illustrations are largely secured from seed fields where quantity production is of first importance. The vines are planted thickly and the main crop is permitted to reach maturity. Thus, these dimensions may vary considerably under different cultural conditions. Our maturity dates for the most part are those obtained in the Northern states.





ALABAMA SWEET

Size: 16 x 10 inches

Weight: 30 pounds

Edible in 90 days

Principle use: Shipping

The melons are long with a deep green rind, irregularly striped with a darker shade of green. The seeds are white with slight mottlings and dark tips, and the rind is tough and elastic. It is identical to CAROLINA BRADFORD.



ANGELINO

Size: 11 x 10 inches

Weight: 20 pounds

Edible in 90 days

Principle use: Shipping

There is a black seeded and a white seeded strain; they are identical, however, in all other ways. It is a very attractive melon with dark green skin, featuring a golden tinge at maturity. The flesh is a sparkling scarlet to the rind, and of fine quality, without a trace of stringiness.





BLACK SPANISH

Size: 10½ x 9 inches

Weight: 16 pounds

Edible in 88 days

Principle use: Home garden

One of the older varieties which is mostly desirable because of its earliness. The color is a very dark green and the seeds are very black. It is highly productive and the edible qualities are good. It is identical to BLACK DIAMOND.



CHILIAN

Size: 10 x 9½ inches

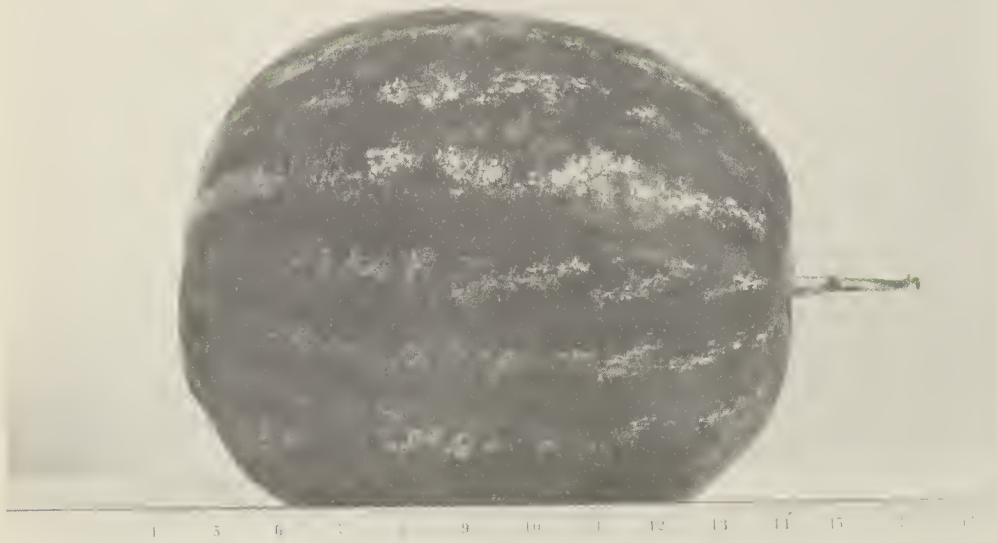
Weight: 18 pounds

Edible in 85 days

Principle use: Shipping

There are two strains—black seeded and white seeded. The former is the most popular, but otherwise they are identical. They are early, prolific, and the eating qualities are excellent. The outside coloring is dark green with darker green stripes. The bright red flesh is edible to the thin, tough rind.





COLES EARLY

Size: 10½ x 8½ inches

Weight: 20 pounds

Edible in 80 days

Principle use: Home gardens

The rind is dark green, irregularly striped with a lighter shade. The flesh is red, very firm and of delicious flavor. The seeds are black. Coles Early is widely used and because of its earliness is chiefly of value in sections with a limited growing season. It is identical to HARRIS EARLIEST.



CUBAN QUEEN

Size: 12 x 10 inches

Weight: 21 pounds

Edible in 90 days

Principle use: Shipping

A very prolific melon of attractive appearance. The color is light green with uneven stripes of a dark shade. The rind is tough and rather thick. The flesh is dark pink and the seeds are black. It is one of the older varieties, but continues to be popular and is valuable for home use as well as for market. It should not be confused with DIXIE QUEEN.





**CITRON
GREEN SEEDED
(Colorado Preserving)**

Size: 9 x 9 inches

Weight: 15 pounds

Citrons are not edible as fresh fruit and are used only for preserving. The flesh is white, hard, and the vines are enormously productive. The seeds of this variety are a smooth, shiny green, and very heavy. The outside color is light green, with heavy, dark green stripes.



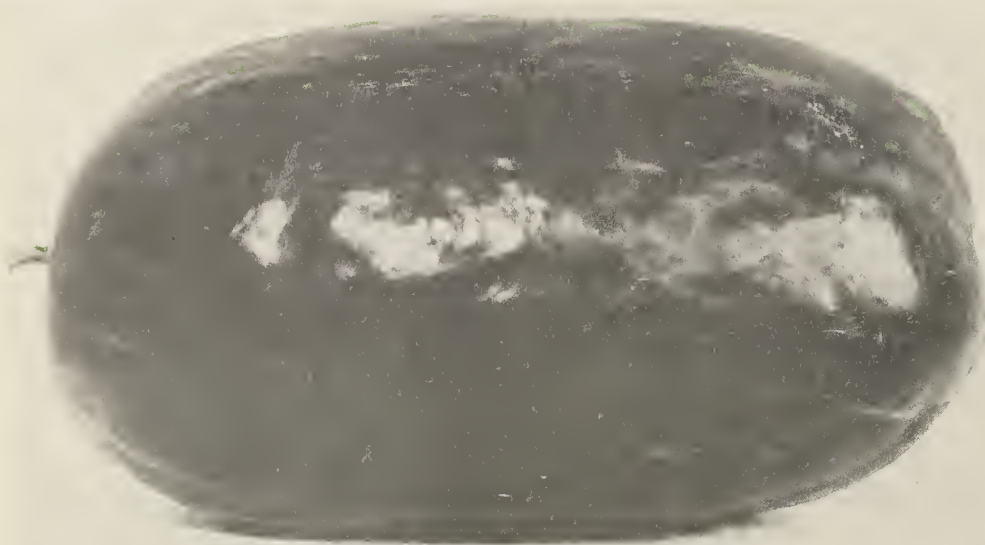
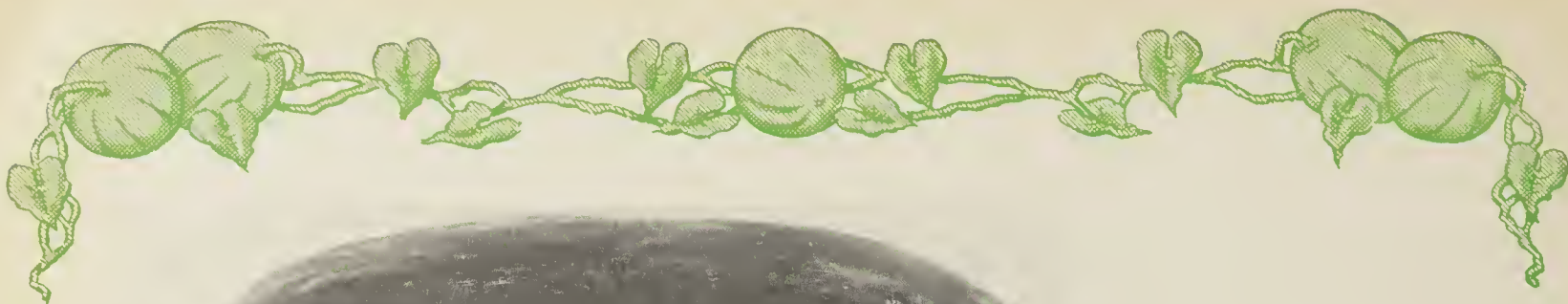
CITRON RED SEEDED

Size: 7½ x 7½ inches

Weight: 10 pounds

It is identical to the Green Seeded, except the seeds are a bright red, and the fruits are considerably smaller and earlier. This strain is the most popular of the preserving types.



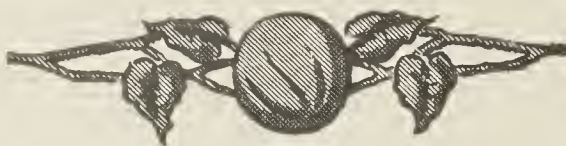
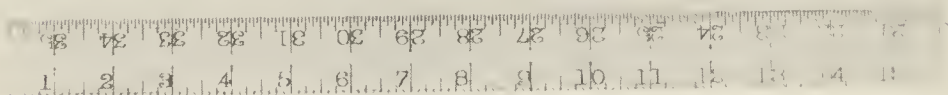


**CITRON: KANSAS
STOCK OR PIE MELON**

Size: 16 x 9½ inches

Weight: 28 pounds

An oblong fruit with square ends, mottled on the outside in two shades of green. The seeds are of a gray green color. The flesh is white but not as hard as other citrons, and it is used mostly for stock feeding.



DARK ICING

Size: 13 x 11½ inches

Weight: 25 pounds

Edible in 90 days

Principle use: Home markets

It is a medium early white-seeded variety with deep pink flesh and rather thick rind. The outside color is dark green with indistinct veining, and it is quite a desirable kind.





DIXIE

Size: 18 x 10 inches

Weight: 28 pounds

Edible in 90 days

Principle use: Home garden

A very dark green melon with a mottling of lighter green. The rind is very thin, the flesh is bright red and the seeds are black. Its keeping qualities are remarkable.



DIXIE QUEEN

Size: 15 x 12½ inches

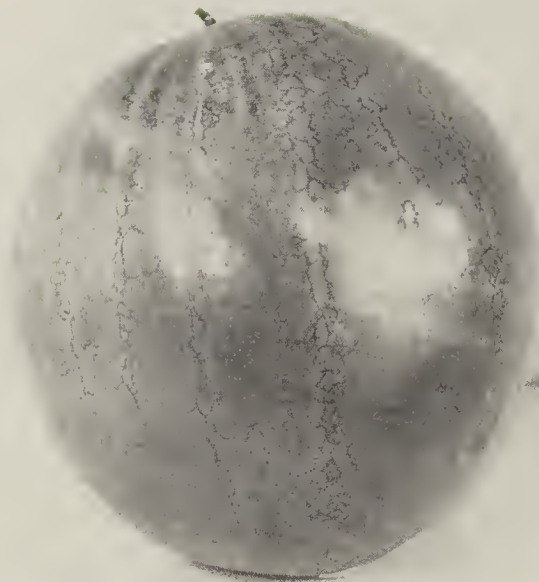
Weight: 32 pounds

Edible in 85 days

Principle use: Shipping

The Dixie Queen is a comparatively new introduction of medium size but often growing to a larger size, and weighing as high as 50 pounds or more. It is early, an excellent shipper and of good quality. The color is light green alternately striped with dark green. The rind is fairly thin and tough for shipping and the variety is very desirable for home use because of its quality. The flesh is dark pink and the few seeds are small and white.





EARLY CANADA

Size: 10 x 9½ inches

Weight: 15 pounds

Edible in 75 days

Principle use: Home garden

One of our recent introductions recommended for the most northerly latitudes. It has actually matured in 75 days from planting under ordinary growing conditions. The size is medium and the flavor is good. Its outside color is greyish-green or almost white at maturity, with a fine green veining. The rind is thin and the flesh is a bright red with small, mahogany brown seeds.



EARLY FORDHOOK

Size: 14 x 12 inches

Weight: 25 pounds

Edible in 85 days

Principle use: Home gardens

A large, extra early melon of good quality. The rind is dark green mottled with stripes of a darker color. The flesh is deep pink and the seeds are white. A widely used water-melou, chiefly because of its extreme earliness.



EARLY KANSAS RED SEEDED

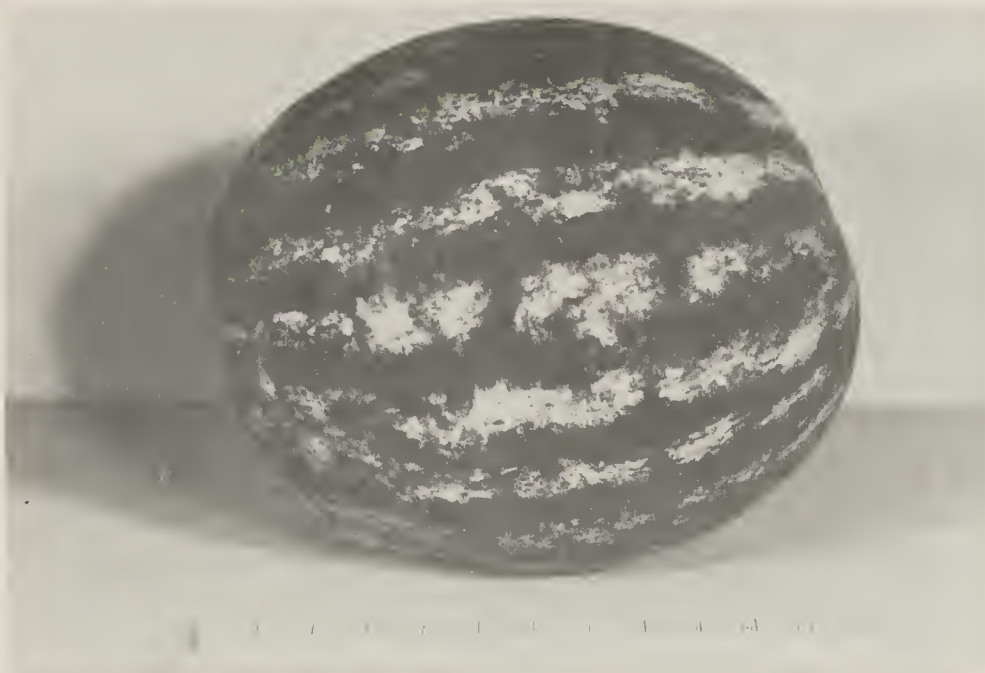
Size: 15 x 13 inches

Weight: 40 pounds

Edible in 85 days

Principle use: Local markets

Another recent introduction of outstanding merit. It has rapidly gained wide popularity on the markets of the mid-west. The size is large, it is remarkably early and of fine quality. The outside color is dark green with alternate stripes of a lighter shade. The rind is of medium thickness well suited for carrying reasonable distances and the flesh is a rich red color, of delightful flavor. It has shiny brown seeds. Other names for this variety are Wichita Red Seeded, Hutchinson Stripe and Red Russian.



EXCEL

Size: 23 x 10 inches

Weight: 48 pounds

Edible in 95 days

Principle use: Shipping

The largest of the shipping varieties, rather late in maturity, it has a very tough, elastic rind. It is dark green in color with a wide, indistinct mottling. The rind is thick and it has red flesh of good flavor and texture. Its size often becomes considerably greater than that shown in our description. There are two stocks, the only difference being that one has black, the other white seeds.





FLORIDA FAVORITE

Size: 16 x 10 inches

Weight: 30 pounds

Edible in 87 days

Principle use: Home markets

The fruits are light green with dark stripes and mottlings. The flesh is deep pink with white seeds and it is a well-known early variety which has enjoyed wide popularity.



GEORGIA RATTLESNAKE

Size: 21½ x 9 inches

Weight: 30 pounds

Edible in 92 days

Principle use: Shipping

A long, fairly large melon with light green color, irregularly mottled, with dark green stripes. The rind is quite thick, the flesh pink in color and the seeds are white with dark tips. It is a good shipping variety of striking appearance because of the contrast between the outside colors.





GOLDEN HONEY OR YELLOW FLESH ICE CREAM

Size: 12 x 11 inches

Weight: 20 pounds

Edible in 90 days

Principle use: Home garden

The best of the yellow fleshed melons, it is oblong in shape and the seeds are brown. The rind is a dark green, with irregular, rather indistinct stripes of a darker green. The flesh is a sparkling golden color, very attractive and fully as delicious as its appearance indicates. The white seeded strain is identical.



GRAY MONARCH OR LONG LIGHT ICING

Size: 16 x 10 inches

Weight: 25 pounds

Edible in 90 days

Principle use: Home markets

A large type of the long melons, the rind is light green with dark veining. It is one of the older melons, not adapted for shipping but very productive and fairly early in maturity. The flesh is pink and the seeds are pure white.





HALBERT HONEY

Size: 20 x 12 inches

Weight: 32 pounds

Edible in 87 days

Principle uses: Garden and local markets

The Halbert Honey is second only to the Kleckley types in popularity for home gardens and nearby markets, for melons of its class. The shape is long and cylindrical, and the rind is a deep green with fine veins. The flesh is dark pink and the white seeds are tipped with black.



HUNGARIAN HONEY

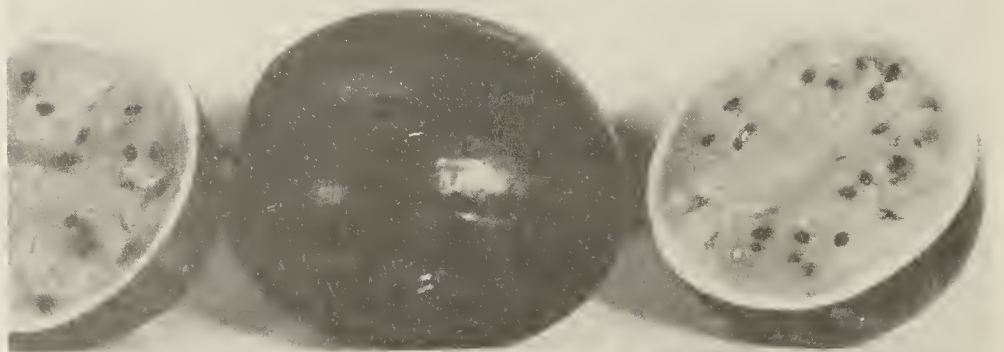
Size: 10 x 10 inches

Weight: 12 pounds

Edible in 87 days

Principle use: Home garden

An extremely early variety, round in shape and with excellent edible qualities. The rind is dark green with irregular stripes of darker green. The seeds are quite small, dark brown in color, and the flesh is pink.





ICE CREAM OR PEERLESS

Size: 18½ x 9 inches

Weight: 22½ pounds

Edible in 90 days

Principle use: Home garden

A white seeded early variety with considerable merit. The fruit is somewhat inclined to taper at the stem end. The rind is thin and of medium green color with darker veining. The vines are prolific and the dark pink flesh is of good flavor.



IMPROVED KLECKLEY SWEET OR WONDER- MELON

Size: 24 x 12 inches

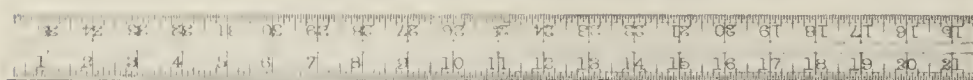
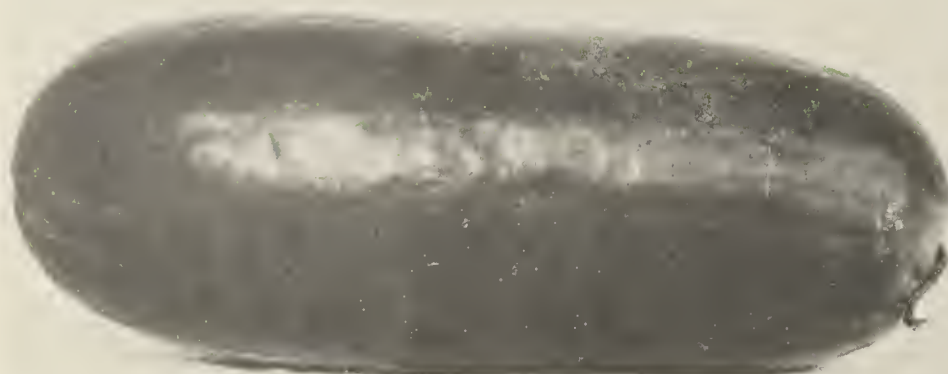
Weight: 40 pounds

Edible in 88 days

Principle uses: Home and market

An improved type of the popular Kleckley Sweet variety, of increased size. The melons are long, cylindrical, and very dark green with creases or ridges running lengthwise. The rind is quite hard and it carries well for some distance. The edible qualities are splendid, and the fruits have bright red flesh with pure white seeds.





IMPROVED KLECKLEY SWEET NO. 6 (Wilt Resistant)

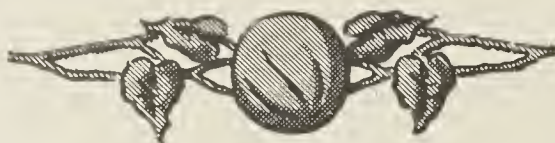
Size: 22½ x 11 inches

Weight: 35 pounds

Edible in 88 days

Principle use: A true Kleckley
for wilt-sick soil

This marks a distinct advancement toward the development of the popular watermelons for production where soil disease is serious. An improved Kleckley Sweet type which has proven almost fully resistant to fusarium wilt. It is dark green, of good length with rich red flesh and white seeds. The quality is equal to any of the melons in its class.



IRISH GRAY

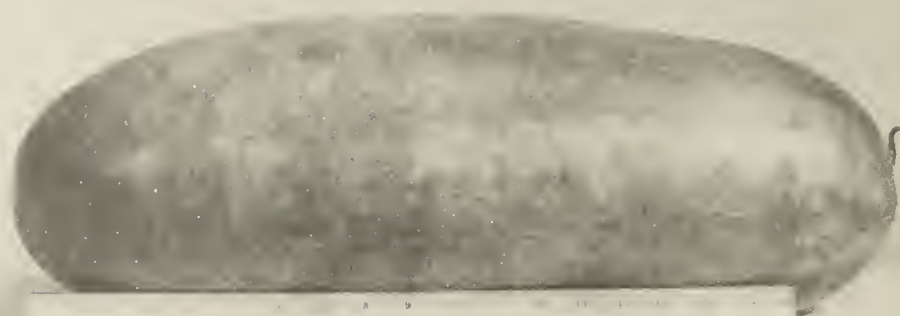
Size: 22 x 11 inches

Weight: 35 pounds

Edible in 90 days

Principle use: Shipping

A long melon, especially recommended for shipping, as the flesh is not stringy or coarse. The rind is light green in color and very tough; it matures a little late. The flesh is dark pink and the seeds are white.





KING & QUEEN WINTER

Size: 9½ x 9 inches

Weight: 14 pounds

Edible in 85 days

Principle uses: Shipping and
storing

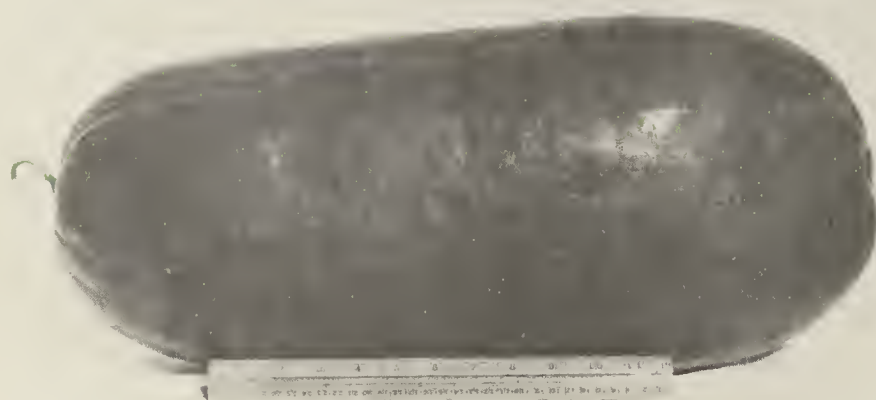
The color is a light cream with faint irregular stripes of light green. It is very early, prolific and the edible qualities are excellent. Properly stored it will remain edible for several months; it is a splendid shipper; and the flesh is sweet and of fine texture. The seeds are quite small and very black.



KING & QUEEN PINK SEEDED

It is identical to King and Queen, except the seeds are a light brown or perhaps of pinkish color, and the melons are slightly larger.





KLECKLEY SWEET

Size: 22 x 12 inches

Weight: 35 pounds

Edible in 85 days

Principle uses: Garden and local markets

One of the standard leaders for home garden and market use. The skin is dark green, the flesh is bright red, very tender and melting. It is medium early in maturity but not well adapted for shipping. The seeds are white with darkened tips. It is sometimes called MONTE CRISTO.



KLONDIKE BLACK SEEDED

Size: 14 x 10 inches

Weight: 25 pounds

Edible in 90 days

Principle use: Market

The California Klondike is a western favorite and becoming increasingly popular elsewhere. For edible qualities and attractive appearance it is surpassed by no other watermelon. The color is a solid dark green, showing slight ribs running lengthwise of the fruit. The rind is thick enough to stand careful handling in shipping, and the flesh is blood red to the rind. The seeds in this strain are small and black.





KLONDIKE BROWN SEEDED

The size is about the same as the California Klondike, and it is otherwise identical except that the seeds are coffee colored. Some planters prefer this stock and it is the original introduction.



KLONDIKE NO. R7 (Wilt Resistant)

This is the first strain of the Klondike to be released showing a high resistance to wilt. It is otherwise very similar in all respects to the other types except the seeds are mostly black intermingled with lighter shades. This melon seems fully as desirable as the other Klondikes for both edible quality and shipping.





KLONDIKE STRIPED

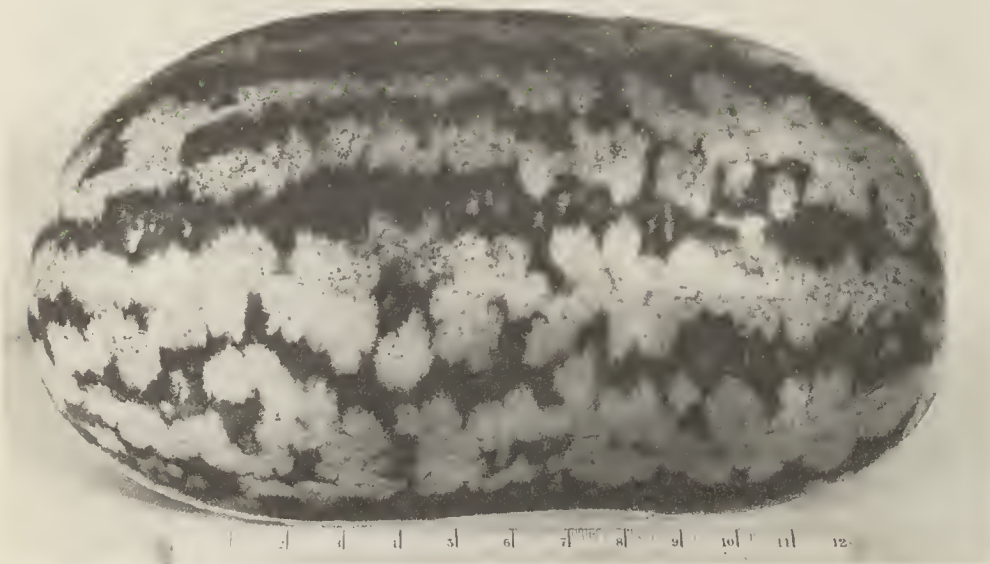
Size: $15\frac{1}{2} \times 10\frac{1}{2}$ inches

Weight: 27 pounds

Edible in 90 days

Principle use: Shipping

A most attractive melon in both outside appearance and especially when cut. The rind is tough, hard and fairly thick. The color is light green with irregular dark green stripes. It does not show sunburn and has proven very desirable for shipping. The size is convenient, the flesh is scarlet and sugar content is higher in the Klondike than in any of the other watermelons. Its edible qualities are truly delicious. This strain has black seeds, splotted and striped with brown at the edges.



KOLB'S GEM

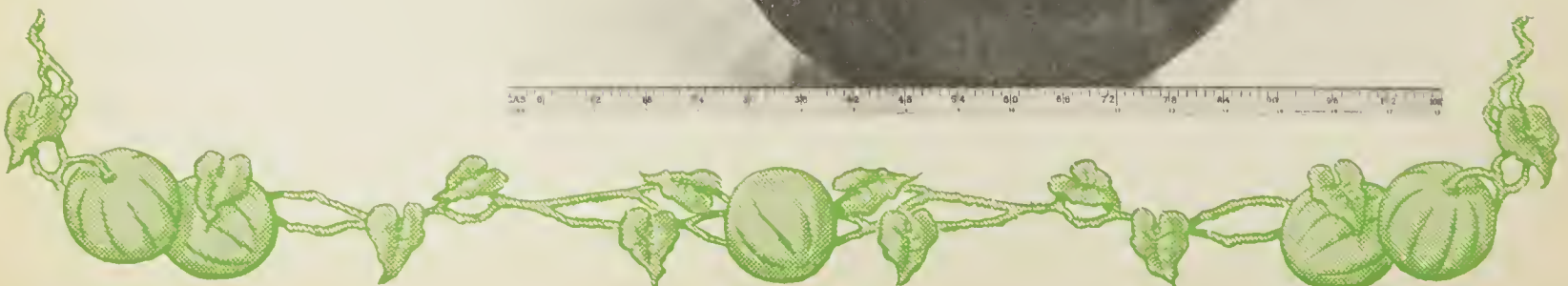
Size: 12 x 10 inches

Weight: 25 pounds

Edible in 90 days

Principle use: Shipping

An oval melon, slightly flattened at the ends. It is striped alternately with light and dark green; pink flesh, black seeds, and it is adapted for shipping.





McIVERS OR WONDERFUL SUGAR

Size: 18 x 10 inches

Weight: 30 pounds

Edible in 92 days

Principle use: Shipping

The rind is light green with irregular dark green stripes. The shape is long and the shipping qualities are excellent; seeds are white with a trace of brown; it is a prolific kind and rather late in maturing.



NORTHERN SWEET

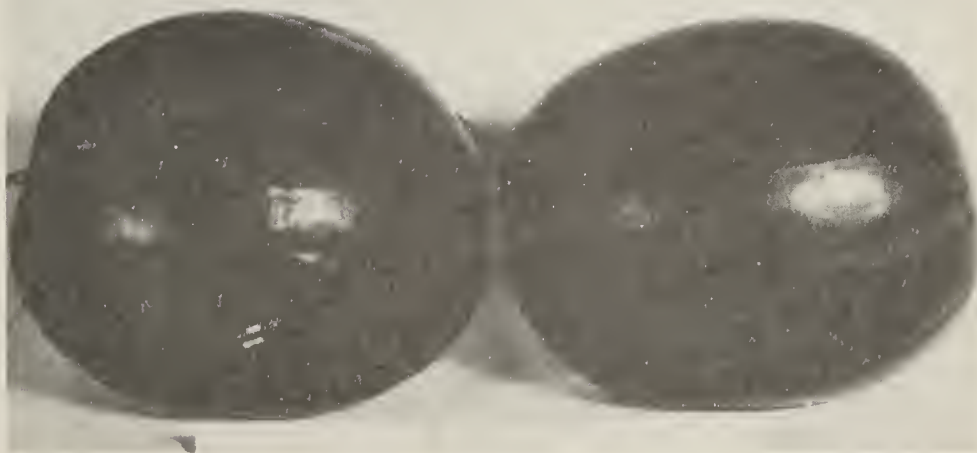
Size: 10 x 9 inches

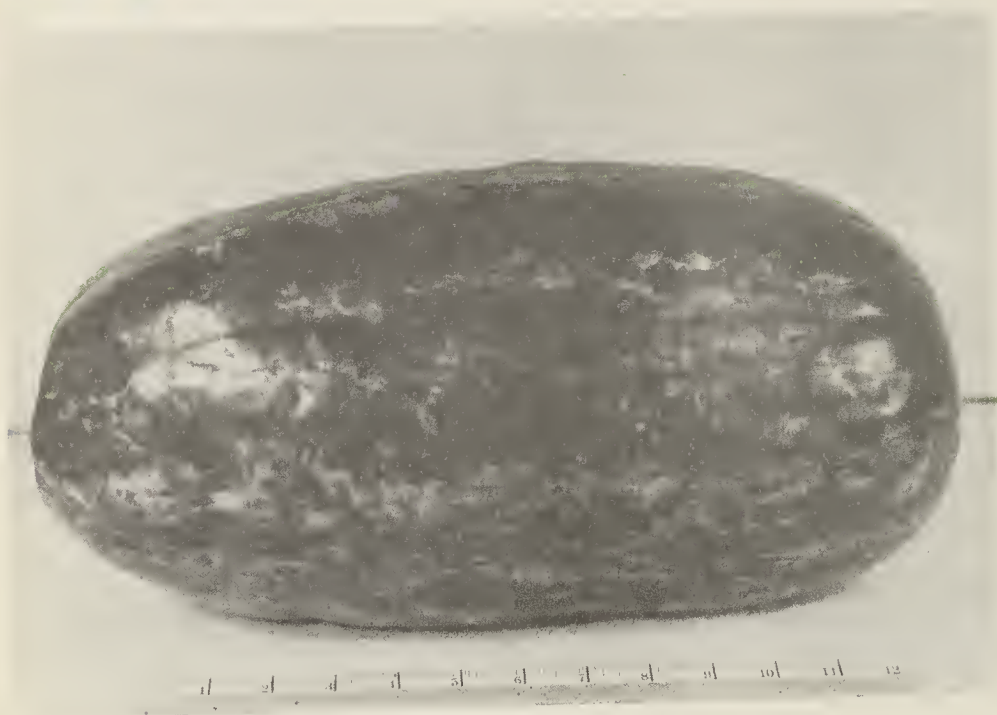
Weight: 12 pounds

Edible in 78 days

Principle use: Home garden

A recent introduction from Minnesota which is proving very popular where the growing season is limited. It is among the best of the small, early varieties for this purpose. The color is green with narrow stripes of a darker green. The flesh is of good quality, dark pink in color, and the seeds are light brown with a dark stripe around the edge.





PHINNEY'S EARLY

Size: 16 x 9 inches

Weight: 20 pounds

Edible in 82 days

Principle use: Home markets

A very prolific, hardy variety with white seed, tipped with black. The shape is oblong; color dark green with strange, speckled light green stripes. While not adapted for shipping, it is a good sort for home use and early markets.



ROUND LIGHT ICING

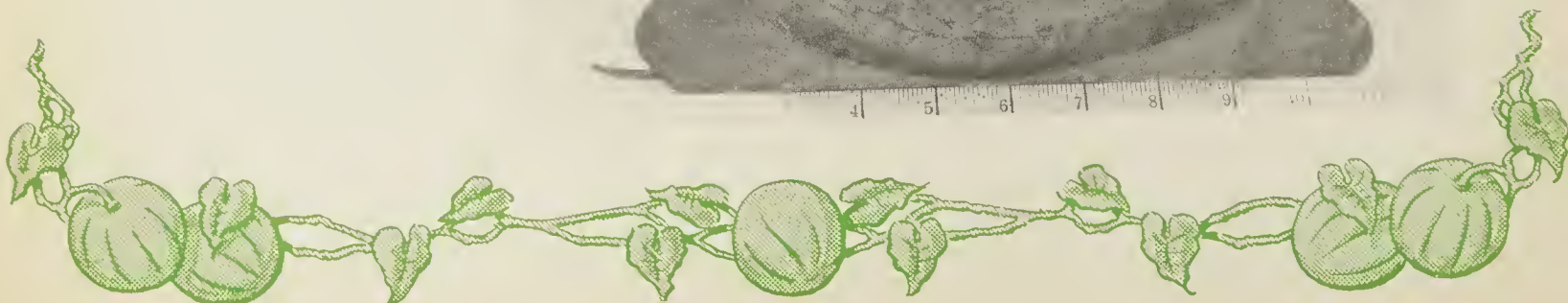
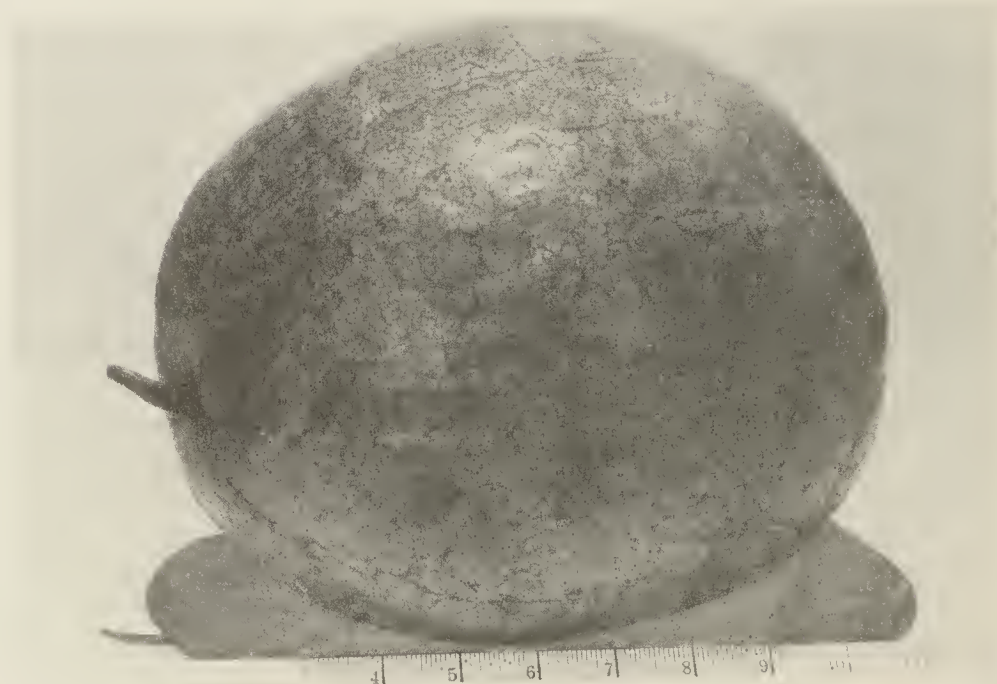
Size: 13 x 12 inches

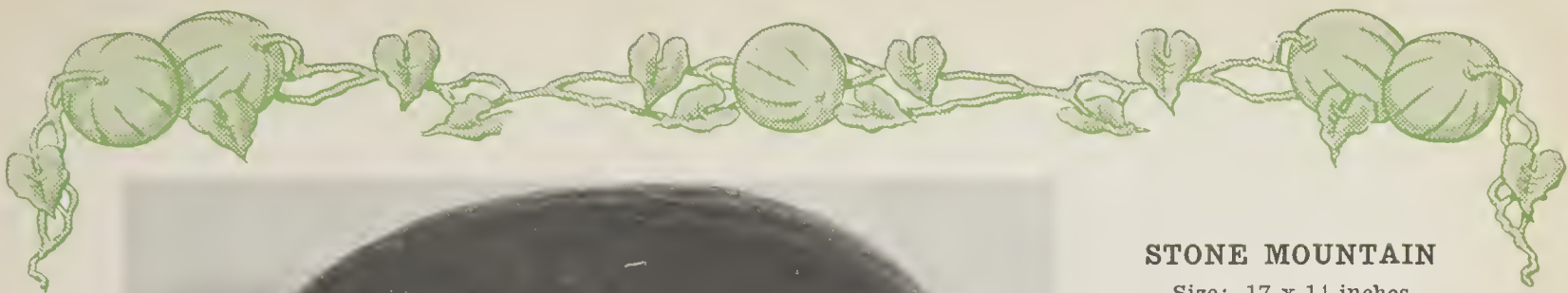
Weight: 20 pounds

Edible in 90 days

Principle use: Home garden

A medium early melon, the rind is light green with heavy veining. The flesh is deep pink, the seed white, and it is a popular kind for home and market garden trade.





STONE MOUNTAIN

Size: 17 x 14 inches

Weight: 50 pounds

Edible in 85 days

Principle uses: Home and shipping

It has become one of the most popular varieties for general use. The size is often very large and the flavor and texture are of the best. Its color is a dark green with finer green veining. The shape is broad oval with blocky ends, and the rind is quite thick. The flesh is bright crimson, sweet and crisp and the seeds are white, tipped and spotted with black.



STONE MOUNTAIN IMPROVED NO. 5 (Wilt Resistant)

Size 14 x 12 inches

Weight: 32 pounds

Edible in 85 days

Principle use: A Stone Mountain for wilt-sick soil

A development from Stone Mountain which has proven fully resistant to fusarium wilt. It resembles Stone Mountain in all respects, although the white seeds are somewhat more mottled, and the size does not often become as great. Under the most severe conditions no plants have been destroyed by the wilt disease.



Photograph: Courtesy Iowa State College, Ames, Iowa





SUGAR STICK

Size: 16 x 10 inches

Weight: 25 pounds

Edible in 90 days

Principle use: Shipping

A good type of the long melons, it has a light green colored rind with dark green veining. The rind is tough, while the flesh is pink, thick and most delicious. The seeds are black, but otherwise this melon is somewhat similar to Irish Grey in general appearance.



SUN, MOON & STARS

Size: 11 x 10 inches

Weight: 18 pounds

Edible in 88 days

Principle use: Home garden

It is a novelty but not without merit. The edible qualities are about average. The vines and fruit are generously splotted with bright yellow markings of varying size. Many of the other watermelons are often flecked with yellow spots, both on the fruit and foliage, too. In Sun, Moon and Stars, the flesh is pink and the seeds are of brownish color.





SWEETHEART

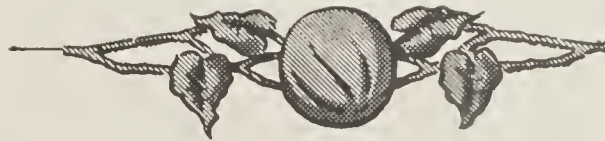
Size: 13 x 11 inches

Weight: 22 pounds

Edible in 88 days

Principle use: Shipping

The melons are often quite large and the quality is very good in this old, well-known variety. The color is a light gray with fine green veining. The flesh is bright red and the seeds are black. It has a very tough rind, making it an excellent shipping kind.



SWEET SIBERIAN

Size: 9 x 9 inches

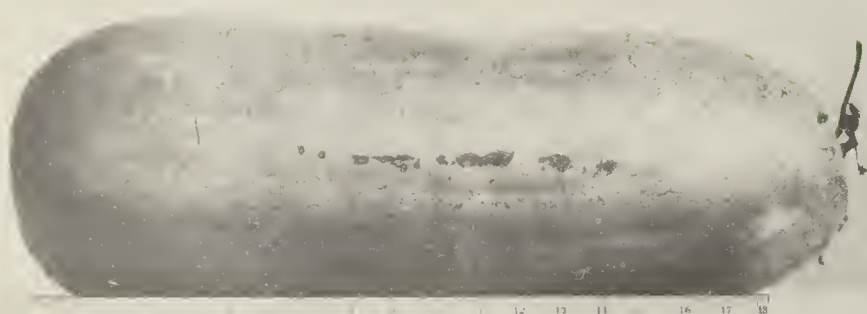
Weight: 10 pounds

Edible in 80 days

Principle use: Home garden

This is one of the few yellow fleshed kinds, desirable chiefly because of its earliness. The outside color is green, the seeds are very small and light brown. Its quality is very good.





THURMOND GRAY

Size: 22 x 11 inches

Weight: 35 pounds

Edible in 90 days

Principle use: Shipping

Similar to Irish Gray, except the fruits are more cylindrical throughout and the seeds are brown. The quality is excellent, the flesh being crisp and tender, while the rind is very hard for shipping purposes.



TOM WATSON

Size: 22 x 12 inches

Weight: 35 pounds

Edible in 92 days

Principle use: Shipping

An old favorite among the shipping sorts, it grows to large size. The rind is tough, thin, and it has good keeping qualities. The color is dark green, ripening to a lighter shade with much veining. The flesh is of high quality, deep red in color, and the seeds are brown with some mottling.





THE WILL ROGERS

Size: 14 x 12 inches

Weight: 35 pounds

Edible in 88 days

Principle uses: Home garden
and market

Another new melon of the Stone Mountain type, often growing to enormous size. The skin is dark green; it is shaped like Stone Mountain, and the seeds are white tipped with black. The flesh is bright red of good quality, and this sort seems to have merit.





WILT RESISTANT GREY SHIPPER

Size: 23 x 11 inches

Weight: 35 pounds

Edible in 87 days

Principal uses: Home market
and shipping

A wilt resistant variety developed by the Department of Agriculture in Australia. It has been produced for seed in both California and Iowa to acclimate the variety to American conditions. It belongs in the class of the light colored melons of the Irish Grey and Thurmond Grey types. The stock is of excellent quality and highly resistant to wilt. The outside color is light grey with a fine green veining. The rind is reasonably thick and tough for shipping purposes. The flesh is dark pink, of fine texture and the seeds are a brownish black in color.



GREY SHIPPER Watermelons thrive on soil that is highly infested with the wilt disease. It has made an excellent vine growth and normal size melons on soil where common varieties could not survive. It is the most resistant to fusarium wilt of any of the kinds available at this time.







Squash and Pumpkin

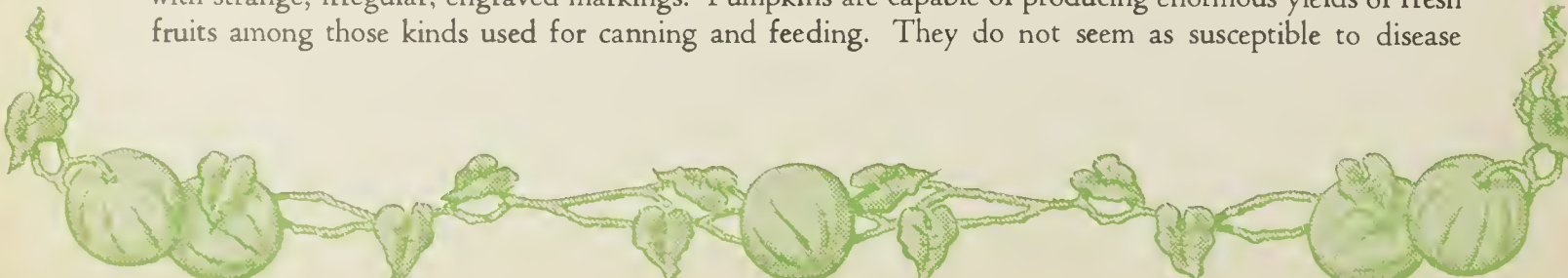
Squash (*French*, COURGE; *Italian*, ZUCCA; *Spanish*, CALABAZA; *Danish*, SQUASH-GRAESKAR; *German*, KURBISS)

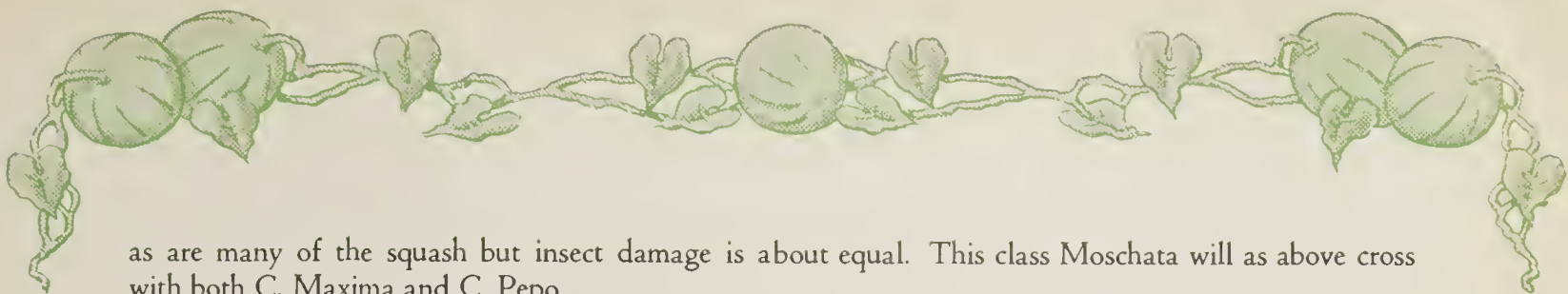
Squash and pumpkin belong to the gourd family and to a number of distinct groups or classifications. The chief ones are *Cucurbita Maxima*, *Cucurbita Moschata* and *Cucurbita Pepo* (var. *melo pepo*). In our descriptions each variety is listed under its proper nomenclature that our readers may more readily determine those kinds which will cross-pollinate.

Squash are generally divided into two types, Winter Squash and Summer Squash. The winter kinds are those which can be stored and are used only when they have been fully matured. They belong to the family *C. Maxima* and comprise such varieties as the Hubbards, Banana and King of Mammoth. The seeds are large and enameled, usually white or brown in color and bright in appearance. Their habit of growth is always vining or trailing. They do not cross with any other of the *cucurbita* family except those kinds known as *C. Moschata*. Their principle use is for human consumption; nevertheless they are considered to be a well-balanced ration for livestock and are highly relished by most domestic animals. These kinds are usually harvested by hand methods, must not be permitted to ferment before cleaning and are grown successfully in all parts of America with the exception of the southern latitudes. The heart or meat of the seed is used in confections and as medicines to some extent. The seed are also high in oil content but do not compare favorably to the present sources of raw oil. Among diseases and insect pests the black squash bug is likely the worst enemy to winter squash. It attacks the growing plant and bores through the stem to suck the juice. Spray manufacturers have finally developed a successful control for this insect.

Summer squash (rightfully pumpkin) are members of the family *C. Pepo* and comprise chiefly those kinds which are eaten when young and immature. They include White Bush, Crookneck, Straightneck and the Vegetable Marrows as well as a few others that are used when fully ripe such as Table Queen, the Fordhooks, a few of the pumpkins, etc. Those kinds which are produced on a bush or upright plant are classified as *Melopepo* and are so listed in our descriptions to differentiate between those of running growth which are listed as *C. Pepo*. This class will readily cross-pollinate with the group *C. Moschata* and most likely with the yellow blossom ornamental gourds. They are quick growing plants, adapted to very general use because they thrive under almost any conditions and will endure both heat and drought. Harvesting is either by hand or with machinery. The seed require fermenting before being washed and cleaned. Seeds of this group are generally small in size and of a brownish color. These varieties are subject to most of the plant diseases and insect pests. Chiefly, among insects is the striped cucumber beetle. It is of interest to note that summer types of squash comprise perhaps, next to gourds, the widest range in shape and color that is known in any vegetable.

C. Moschata consists of the family known as pumpkins which are considered edible only after becoming fully ripe. Some kinds because of their lack of flavor are used largely for stock food. All pumpkins have running vines and the leaves differ from squash in that they are usually mottled with white. The seeds vary considerably in size and appearance. Among the Cushaw types are large, enameled seed with strange, irregular, engraved markings. Pumpkins are capable of producing enormous yields of fresh fruits among those kinds used for canning and feeding. They do not seem as susceptible to disease





as are many of the squash but insect damage is about equal. This class Moschata will as above cross with both C. Maxima and C. Pepo.

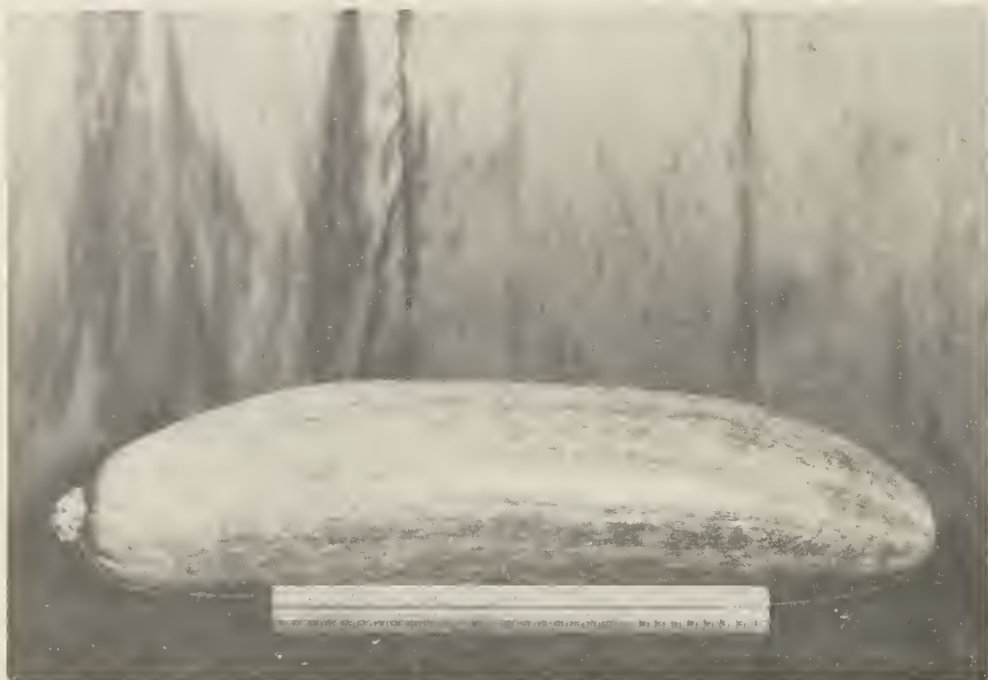
Squash and pumpkins are probably native to the Americas and neighboring Islands. The word "squash" seems to have been derived from the American aborigines and in particular from those tribes occupying the northeastern Atlantic coast. One early writer refers to them as "squout-tersquashes," a kind of melon or rather gourd, for they sometimes degenerate into gourds. The Hubbard squash is said by Gregory, its introducer in 1857, to be of unknown origin but to resemble a kind which was brought by a sea captain from the West Indies. The Marblehead, also introduced by Gregory and distributed in 1867, is said to have come directly from the West Indies. Strangely enough some 70 years later we are again introducing what is known as "Yakima Marblehead," a winter squash highly recommended as one of the few varieties resistant to curly top, a virus disease disseminated by the beet leaf hopper.

The annual seed consumption in the United States of both summer and winter squash is probably around 500,000 pounds, produced from about 3000 acres. The principle seed producing sections are in the states of California, Nebraska, Colorado and Michigan.

Efforts have been made to classify squash and pumpkin in growers' lists in accordance with their proper botanical classifications but this has only led to confusion and the plan has apparently been definitely abandoned. Those belonging to C. Maxima are the true squash while all others are rightfully pumpkins. It should therefore, be borne in mind that when two varieties are planted within the distance that pollen is disseminated by natural causes, the following groups will readily cross: Cucurbita Maxima will cross with C. Moschata, and vice versa. Cucurbita Moschata will cross with C. Pepo, and vice versa. No other combinations among the cucurbita will habitually cross-pollinate under ordinary garden conditions. (See plant breeding.)

In our descriptions of squash, sizes and weights apply to fully matured fruits. The term "edible in days" means in the case of summer squash, when they are about two thirds grown.





BANANA BLUE
(*Cucurbita Maxima*)

Size: 20 x 5½ inches

Weight: 10 pounds

Edible in 120 days

Used when mature

A long type of winter squash; the seeds are large, brown and highly enameled, while the rind is a slate gray in color. This variety is especially popular on the west coast and it has remarkable keeping qualities.



BANANA PINK
(*Cucurbita Maxima*)

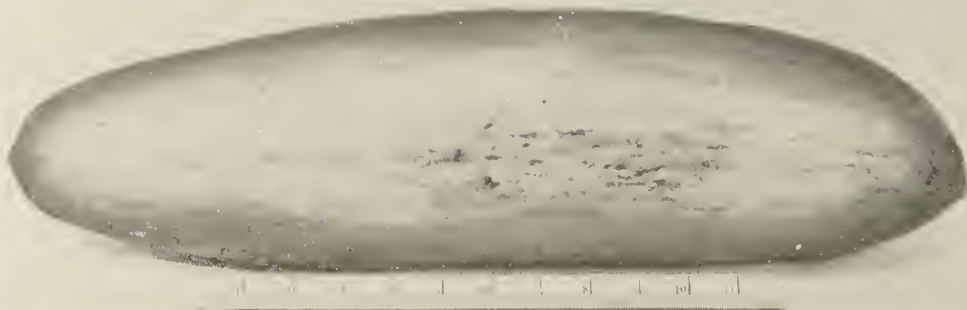
Size: 21 x 5¾ inches

Weight: 10½ pounds

Edible in 120 days

Used when mature

It is almost identical to Blue Banana in shape, although the size may average somewhat larger. Its color is pink or light orange and this strain has gained in popularity during recent years. The Bananas are a common sight in the California markets, as well as elsewhere.





BUTTERCUP
(*Cucurbita Maxima*)

Size: $4\frac{1}{2} \times 6\frac{1}{2}$ inches

Weight: $3\frac{1}{2}$ pounds

Edible in 100 days

Used when mature

A fine new squash of excellent quality. Its size is most convenient. The outside color is green with stripes and spots of gray. There is a heart-shaped protuberance at the blossom end. The dry, thick flesh, texture and keeping qualities of this squash are excellent.



BOSTON MARROW
(*Cucurbita Maxima*)

Size: 12 x 8 inches

Weight: 10 pounds

Edible in 100 days

Used when mature

The shape and size of the Boston Marrow is somewhat similar to Improved Hubbard. The skin is lemon in color; the vines are highly productive, and its keeping qualities are excellent. It is widely used for canning purposes. Other names are ORANGE MARROW and PROLIFIC MARROW.





**COCOZELLE GREEN
BUSH—C. Pepo
(Melopepo)**

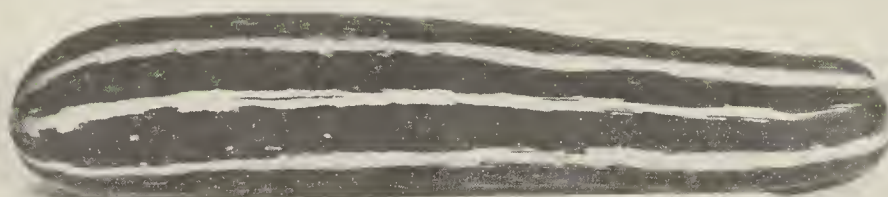
Size: 16 x 4 inches

Weight: 3½ pounds

Edible in 60 days

Used when young

The color is a deep green when young, ripening with alternate stripes of green and gold. The shape is long and cylindrical, tapering at the stem end. It is also called Italian Vegetable Marrow and Long Green Bush Marrow.

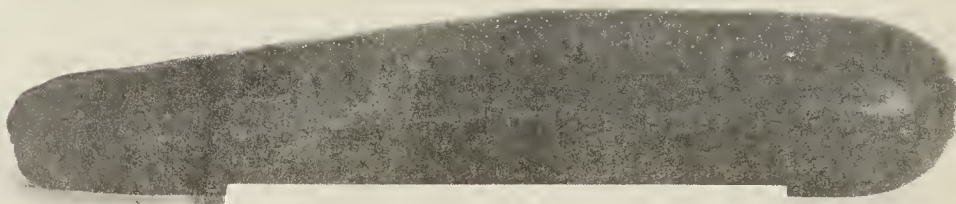


**COCOZELLE
GREEN BUSH
(Extra Long)**

Size: 20 x 3¼ inches

Weight: 3¼ pounds

It is otherwise similar to the other types of Cocozelle, except as the name indicates, it is exceedingly long and slender. It has been desirable in the southern states where it grows to perfection and makes an attractive appearance on the markets. The color is exceptionally dark green when young and it is of fine flavor.





DELICIOUS GOLDEN
(*Cucurbita Maxima*)

Size: $8\frac{1}{2}$ x 8 inches

Weight: $7\frac{1}{2}$ pounds

Edible in 115 days

Used when mature

A true shape of the Delicious variety. The color is a bright golden with lighter stripes, and a distinct green tip at the blossom end. It is of the finest flavor and widely used for canning purposes; for which it is popular on account of its dry flesh.



DELICIOUS GREEN
(*Cucurbita Maxima*)

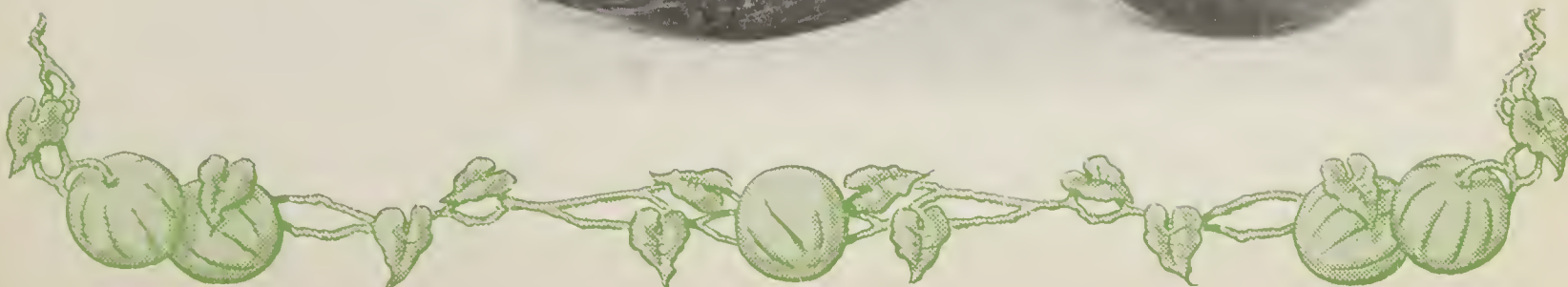
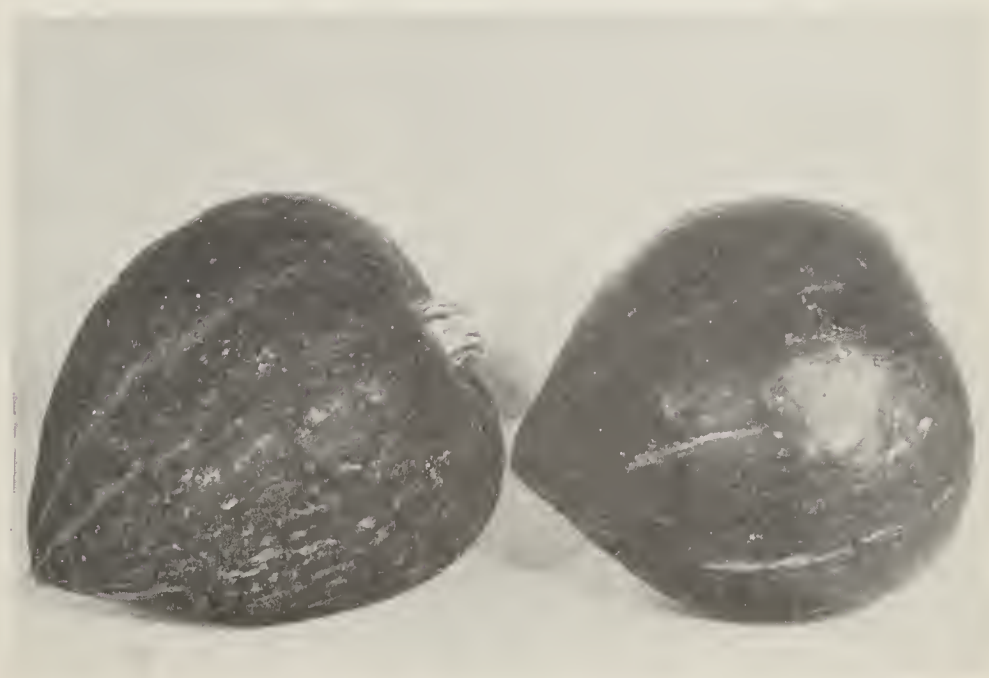
Size: $8\frac{1}{2}$ x $7\frac{1}{2}$ inches

Weight: 7 pounds

Edible in 115 days

Used when mature

The Delicious Squash is top-shaped and is one of the very best for quality. The green color is striped with a lighter shade at the blossom end and the rind is hard. Its keeping qualities are superior to many.





BENNINGS WHITE BUSH

(Green Tint)

C. Pepo.

(Melopepo)

Size: $7\frac{1}{2} \times 2\frac{1}{2}$ inches

Weight: $2\frac{1}{2}$ pounds

Edible in 55 days

Used when young

A very popular strain for market as the young fruits are a deep green, holding their color well until about one-third grown. The fruits become somewhat larger than the Early White Bush and are a cream color at maturity.



EARLY PROLIFIC WHITE BUSH—C. Pepo.
(Melopepo)

Size: $5 \times 2\frac{1}{2}$ inches

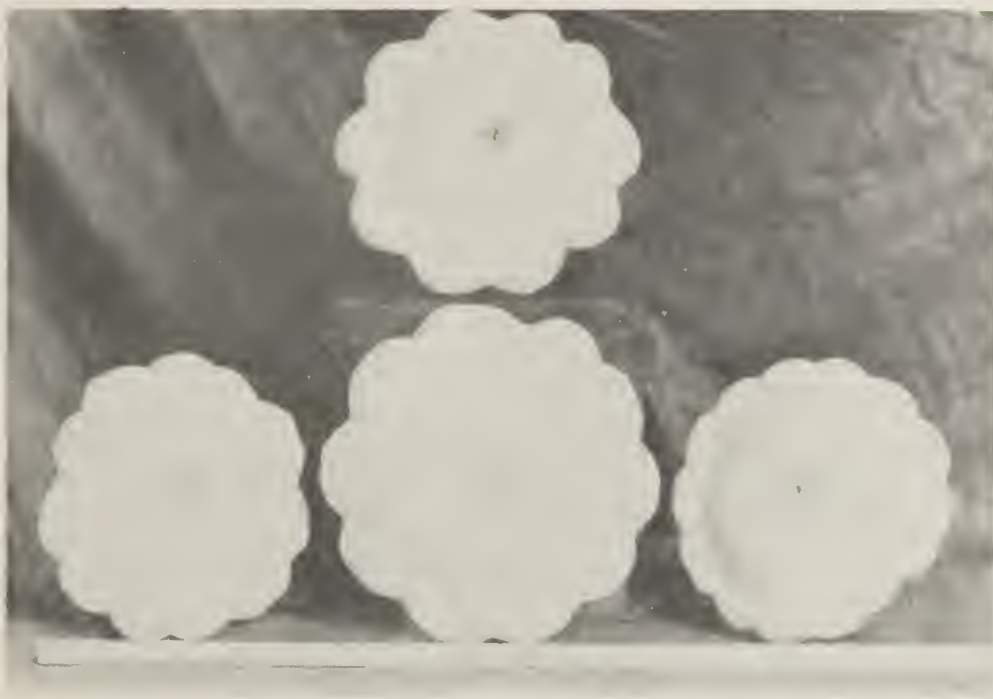
Weight: 2 pounds

Edible in 52 days

Used when young

An early type of White Bush which has enjoyed wide popularity in the south. It is a few days earlier than the other strains and smaller in size with just a trace of scallop. This is a very prolific variety which shows a dark green color in the early stages of growth. It is cream colored at maturity.





EARLY WHITE BUSH
C. Pepo.
(Melopepo)

Size: $6\frac{1}{2} \times 2\frac{1}{2}$ inches

Weight: $2\frac{1}{4}$ pounds

Edible in 55 days

Used when young

It is also called Cymling and White Patty Pan. It is the most popular of the white summer types of squash. The fruits are rather small, quite flat with ridged or scalloped edges. The vines are extremely prolific and disease resisting. Used when but a few days old, they are very tender and can be prepared in a number of appetizing dishes.



EARLY YELLOW BUSH
—C. Pepo.
(Melopepo)

Size: $6 \times 2\frac{1}{2}$ inches

Weight: 2 pounds

Edible in 55 days

Used when young

It is similar in all respects to the Early White Bush, except the color of the skin is a golden yellow. It is not quite as prolific, nor is it as widely used.





**EARLY SUMMER
CROOKNECK YELLOW**
—C. Pepo.
(Melopepo)

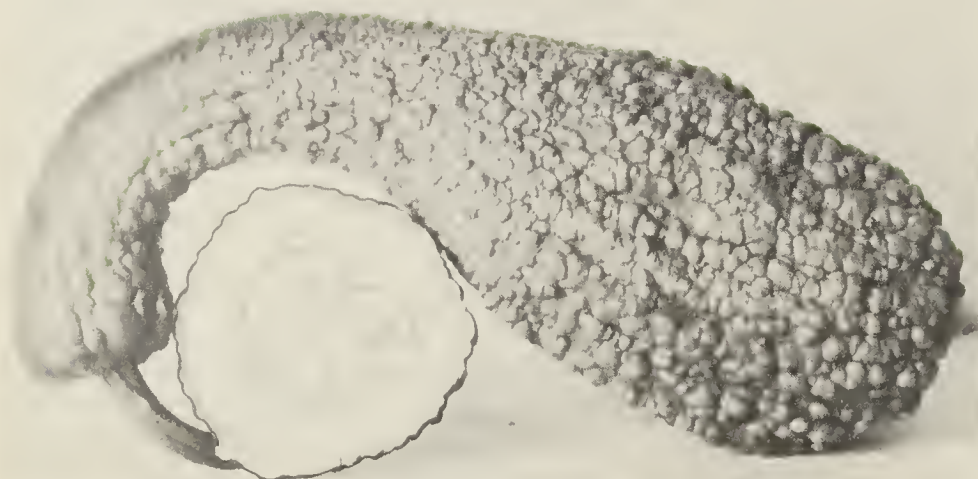
Size: 12 x 3 inches

Weight: 1½ pounds

Edible in 50 days

Used when young

The most popular of the yellow summer varieties. The fruits are rather small, golden yellow in color and thickly covered with warts. The variety is exceedingly prolific. The fruits are curved in shape, the seeds are contained in the bowl or stem end, and it is probably the best-known of all the summer squashes. We have a beautiful pure line strain.



FORDHOOK BUSH
C. Pepo.
(Melopepo)

Size: 7½ x 3 inches

Weight: 2 pounds

Edible in 60 days

Used when mature

A summer variety adapted also for winter use. The skin is a light cream, while the edges are ridged or scalloped; it tapers toward the stem end. This strain is not widely used.



1 2 3 4 5 6 7 8 9 10





**FORDHOOK VINE—
C. Pepo.**

It is identical to the bush type except the shape is somewhat more cylindrical throughout. The strain is more uniform in shape and has always been most popular. The flesh is very thick and sweet and the vines are very prolific.



**GIANT SUMMER
CROOKNECK—C. Pepo.
(Melopepo)**

Size: 16 x 4½ inches

Weight: 4 pounds

Edible in 55 days

Used when young

A very large type of the Early Summer Crookneck, but not as widely used. It is golden yellow in color and thickly covered with warts. It is not as prolific as the small strain and is later in maturity.





GIANT SUMMER STRAIGHTNECK—

C. Pepo.

(Melopepo)

Size: 16 x 3½ inches

Weight: 3 pounds

Edible in 55 days

Used when young

A selection from the Crook-neck strain, the neck is straight and it packs to better advantage. It is of more uniform thickness, the color is lemon yellow and it is well warted. The flesh is thick, of light yellow color and good quality.



GOLDEN CUSTARD—

C. Pepo.

(Melopepo)

Size: 12 x 3 inches

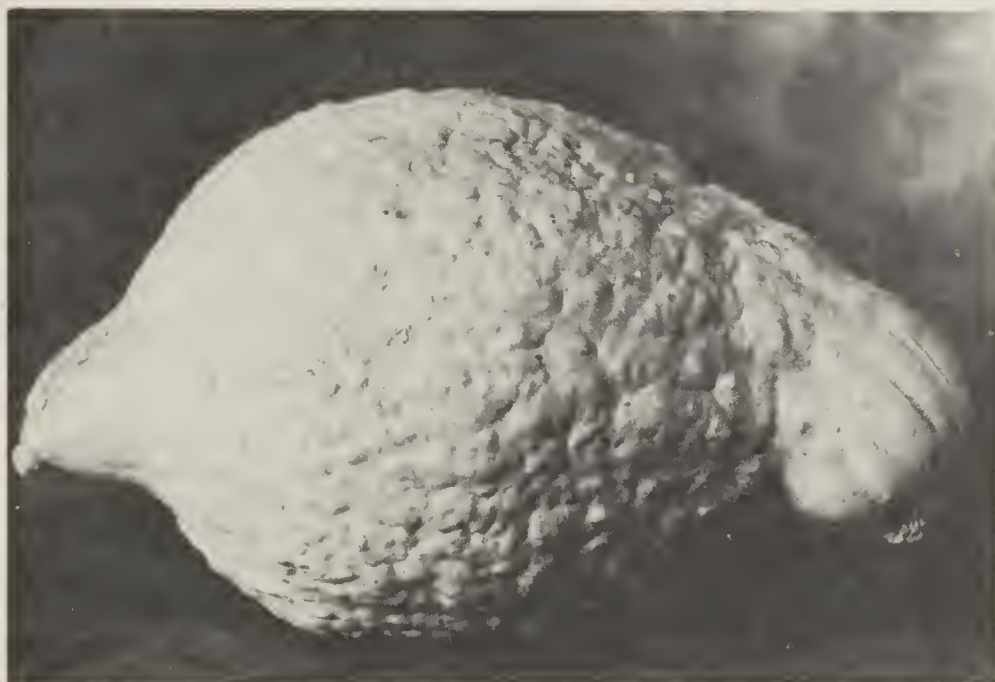
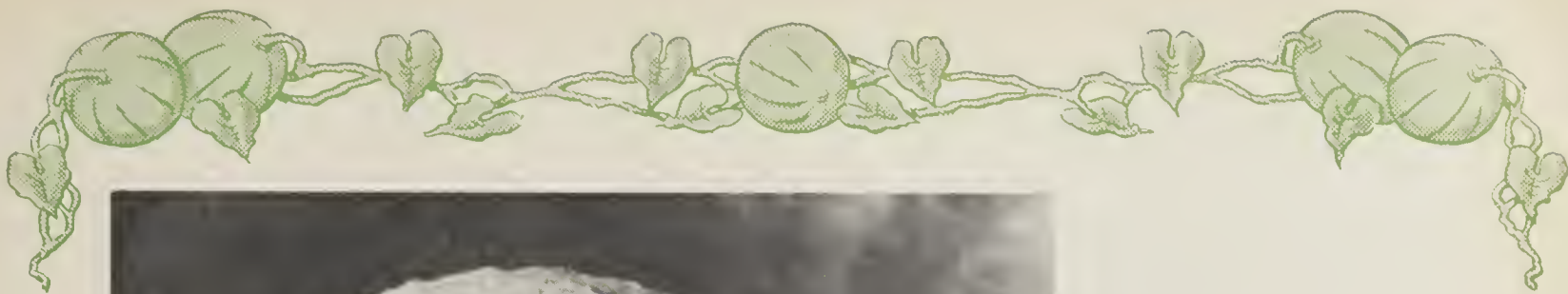
Weight: 4 pounds

Edible in 56 days

Used when young

A large strain of the yellow bush variety. The fruits are large, flat and the edges are deeply scalloped; and are inclined to be a little warted. It is not very prolific and not widely used, but is of very good quality.





HUBBARD BLUE
(*Cucurbita Maxima*)

Size: 14 x 9 inches

Weight: 15 pounds

Edible in 115 days

Used when mature

The color is a gray green and the size is larger than most of the Hubbards. It is heavily warted with pointed ends. The flesh is orange, thick, and the edible qualities are equal to any of the winter types.



**HUBBARD,
CHICAGO WARTED**
(*Cucurbita Maxima*)

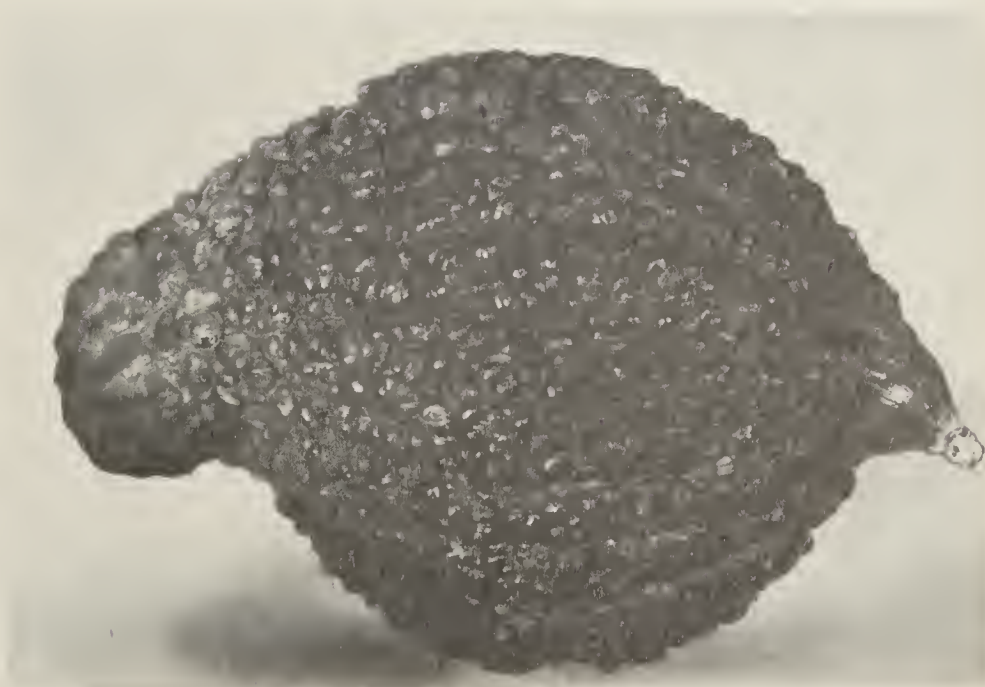
Size: 15 x 10 inches

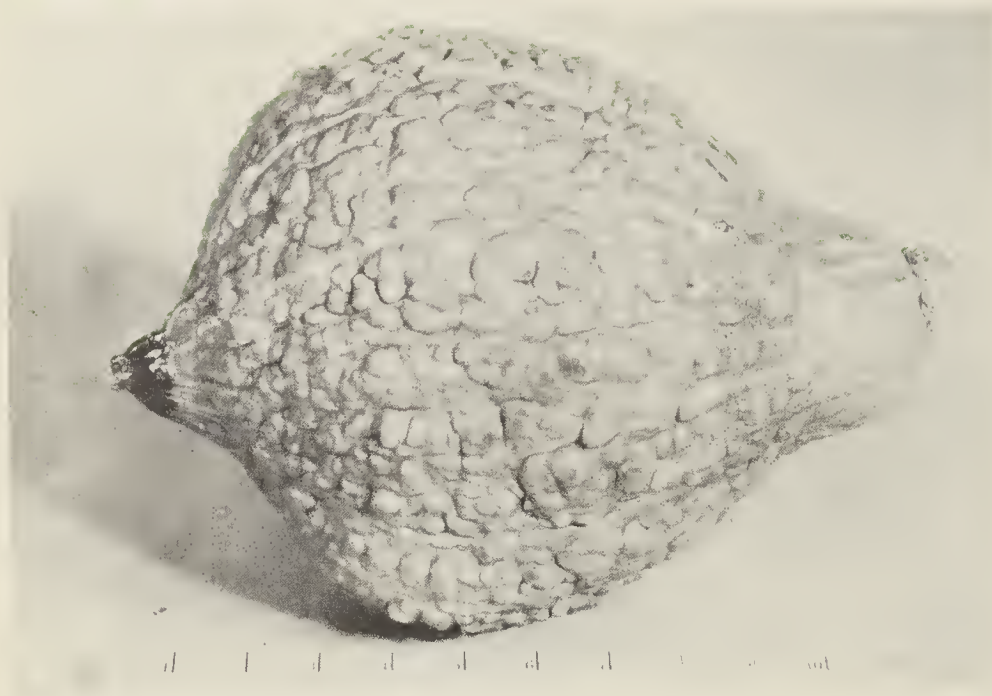
Weight: 16 pounds

Edible in 115 days

Used when mature

It is the largest of the green Hubbards and is thickly covered with warts. Probably the most popular of any squash in this class, an excellent keeper and the thick flesh is dry and sweet.





HUBBARD GOLDEN (*Cucurbita Maxima*)

Size: 12 x 8½ inches

Weight: 9 pounds

Edible in 105 days

Used when mature

It is a little smaller than the green Hubbard types and a few days earlier in maturity. The color is bright golden, the rind thickly covered with rather coarse warts. It is characteristic of the Golden Hubbard to always have a green tip at the blossom end. This stock is quite generally used for canning purposes and its keeping qualities are excellent.



HUBBARD IMPROVED (*Cucurbita Maxima*)

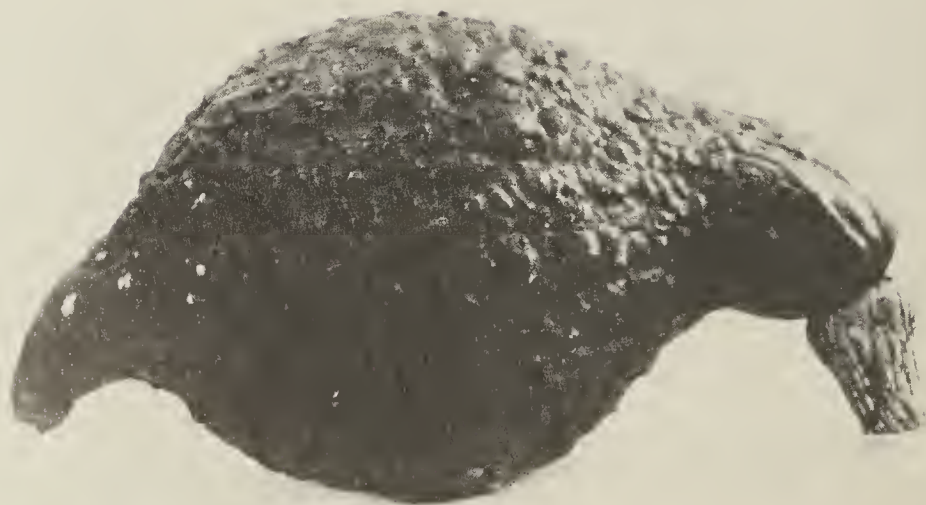
Size: 12½ x 9½ inches

Weight: 12 pounds

Edible in 110 days

Used when mature

Also called True Hubbard. It is one of the best for general purposes. The size is medium, the color deep green with a fair amount of warts. The rind is hard, the flesh thick and of fine texture and it keeps very well. The fruits are pointed at both ends.





**HUBBARD
KITCHENETTE
(Cucurbita Maxima)**

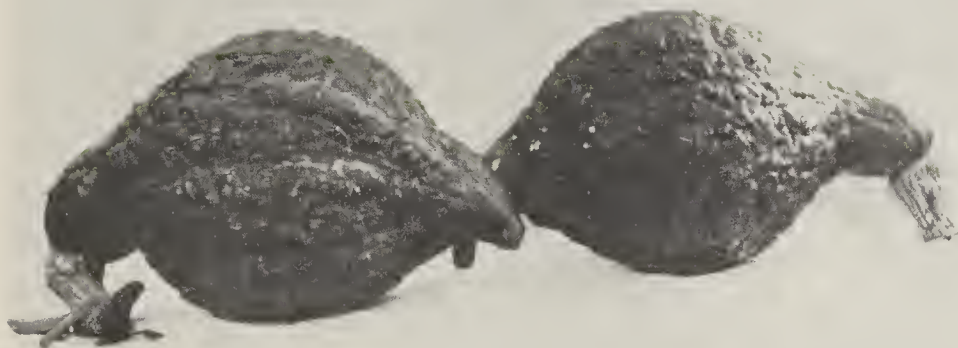
Size: 9 x 6 inches

Weight: 6 pounds

Edible in 105 days

Used when mature

A small strain of the Improved Hubbard, perhaps two-thirds as large. It is of more convenient size for the average family but its use does not seem to increase to any great extent. The quality is fully comparable to any of the other Hubbards in all respects.



**LONG ISLAND WHITE
BUSH—C. Pepo.
(Melopepo)**

Size: 6 x 3 inches

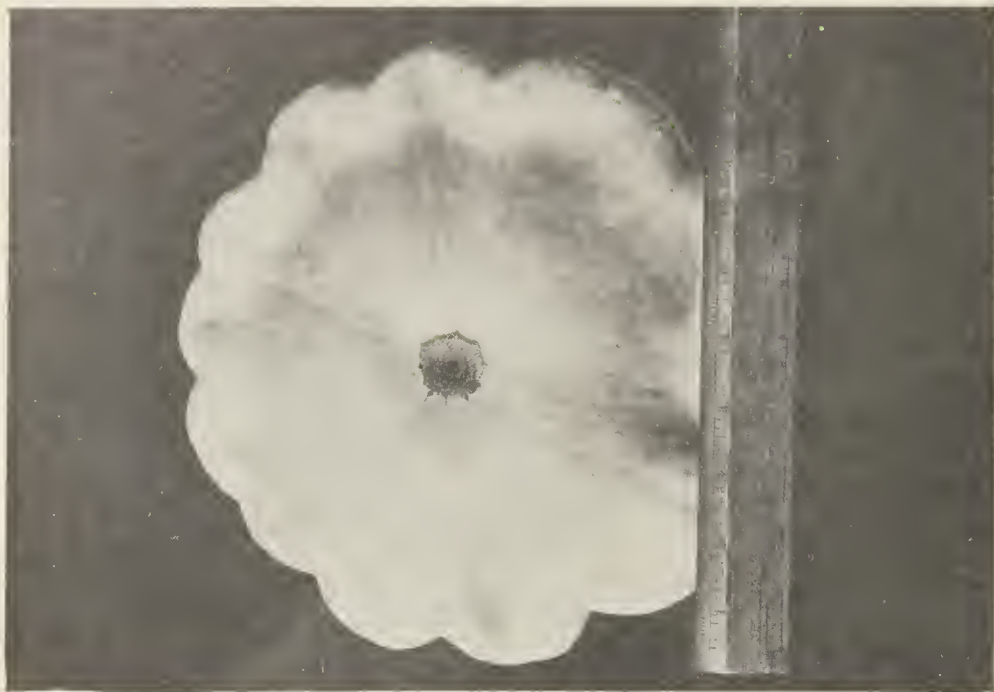
Weight: 2 pounds

Edible in 55 days

Used when young

It differs from other strains of White Bush in being much thicker and the edges do not have the extreme scallops. The fruit tends to be more round in shape; it is very prolific, but is not widely used.





**MAMMOTH WHITE
BUSH—C. Pepo.
(Melopepo)**

Size: 9 x 3 inches

Weight: 3 pounds

Edible in 56 days

Used when young

A large strain of the Early White Bush; the fruits grow to about one-third more size. It is a desirable strain, especially where a larger size is required for market.



**MARBLEHEAD
(Cucurbita Maxima)**

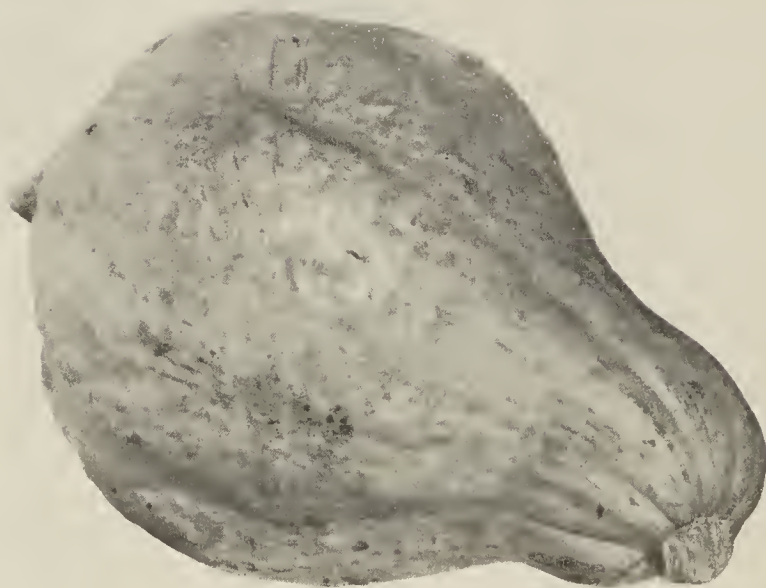
Size: 11 x 9½ inches

Weight: 15 pounds

Edible in 100 days

Used when mature

The Marblehead is an old variety and belongs to the Hubbard family; it is, however, considerably earlier in maturity. The rind is quite smooth, hard, and slate gray in color. The dry, sweet flesh is very thick and quality is extra good. The present stock of this variety known as Yakima Marblehead is highly resistant to curly top. This feature has added to its popularity as many kinds are very susceptible and the disease has become serious in some sections.





MAMMOTH CHILI
(*Cucurbita Maxima*)

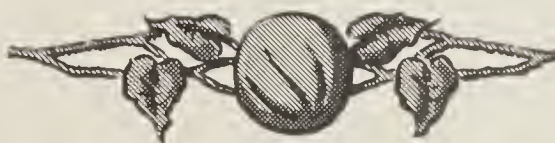
Size: 24 x 18 inches

Weight: 70 pounds

Matures in 120 days

Used when mature

The largest of the squashes, the fruits are long and slightly pointed at the blossom end. The skin is mottled bright orange and yellow; it is used chiefly for feeding stock and exhibition purposes; it often attains a weight of 100 pounds. The flesh is inclined to be a little stringy and coarse.



MAMMOTH WHALE
(*Cucurbita Maxima*)

Size: 25 x 8 inches

Weight: 28 pounds

Edible in 120 days

Used when mature

A winter type of squash with very long fruits, tapering at the stem end. The color is gray with lighter stripes and it is a long keeping variety of good quality. The general shape is similar to Banana but the seeds are white instead of brown.





**SIBLEY OR
PIKE'S PEAK**
(*Cucurbita Maxima*)

Size: 10 x 8 inches

Weight: 8 pounds

Edible in 110 days

Used when mature

The fruits are top shaped and the stem end is flat. The color is slate gray; it is early and very prolific. The seeds of this variety are brown, similar to Banana squash.



**SPAGHETTI OR
GOLDEN MACARONI**
(*C. Ficifolia*)

Size: 10 x 5 inches

Weight: 5 pounds

Edible in 60 days

Used when mature

An interesting novelty with some merit, which has received a good deal of publicity. It is a light golden color, of uniform shape throughout. When cooked whole and cut open, the flesh is in loose shreds, somewhat resembling spaghetti in appearance, from which it gets its name. The edible qualities are fair but it is probably not a true squash.





**SWEET POTATO OR
DELICATA—C. Pepo.**

Size: $7\frac{1}{2}$ x 3 inches

Weight: $1\frac{3}{4}$ pounds

Edible in 58 days

Used when mature

A small squash of unusual quality. The skin is smooth, of light golden color, striped with green at the ridges. The flesh is thick, sweet and of fine texture. It is early and extremely productive.



**TABLE QUEEN—
C. Pepo.**

Size: $4\frac{3}{4}$ x $3\frac{1}{2}$ inches

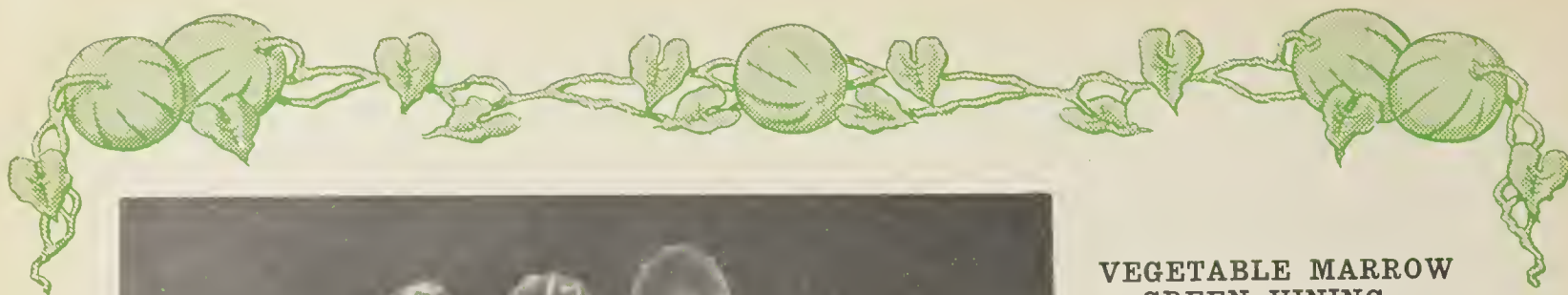
Weight: 1 pound

Edible in 58 days

Used when mature

Also known as Acorn and Des Moines. An individual sized squash which is popular for home and market purposes. The outside color is green and the shape resembles an acorn; they are ribbed, and pointed at the blossom end. The rind is thin; the flesh light orange in color; dry and of good texture.





VEGETABLE MARROW GREEN VINING—

C. Pepo.

Size: 13 x 4 inches

Weight 3½ pounds

Edible in 60 days

Used when young

This variety is similar to Cocozelle Bush, except the vines are running. It more nearly resembles the original types of the variety in regard to length and shape. The color when young is not quite as dark as other strains of Cocozelle. It ripens to a green and gold and the edible qualities are very good.



VEGETABLE MARROW LONG WHITE BUSH

—C. Pepo.

(Melo pepo)

Size: 13 x 4½ inches

Weight: 3½ pounds

Edible in 55 days

Used when young

It is also called English Vegetable Marrow. The fruits are cream colored; long and cylindrical, with a slight taper to the blossom end. The bush type is very prolific, it bears early, and enjoys wide use.





VEGETABLE MARROW LONG WHITE VINE

—C. Pepo.

Size: 14 x 4 inches

Weight: 3½ pounds

Edible in 55 days

Used when young

It is identical to the bush type except the fruits are a little longer and somewhat more slender. The vines are running or trailing. Edible qualities are about equal but it has never been quite as popular for general use.



WARREN (Cucurbita Maxima)

Size: 9 x 11½ inches

Weight: 15 pounds

Edible in 110 days

Used when mature

A large squash of deep orange color, heavily covered with warts. The rind is hard and its keeping qualities are excellent. It has a large, slate colored protuberance at the blossom end, very much like the old Essex Hybrid from which it was developed. The flesh is unusually thick, dry and of excellent flavor.





**ZUCCHINI BLACK—
C. Pepo.
(Melo pepo)**

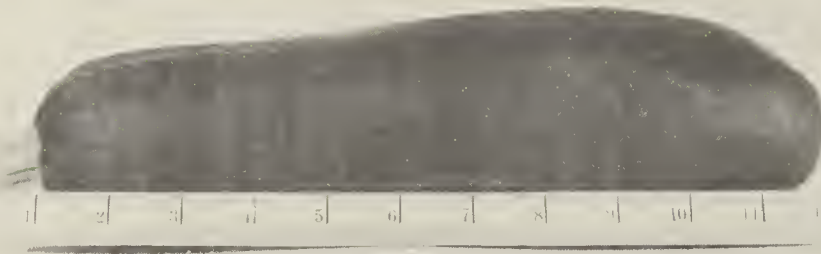
Size: $13\frac{1}{2} \times 3\frac{3}{4}$ inches

Weight: 4 pounds

Edible in 55 days

Used when young

A more recent development in the Zucchini types. This fruit grows long and slender; it shows slight ridges, and is a black green color when young. The fruits are often picked when but a few days old, for California trade. They are very tender, and a table delicacy which are prepared in a number of appetizing ways.



**ZUCCHINI GREY—
C. Pepo.
(Melo pepo)**

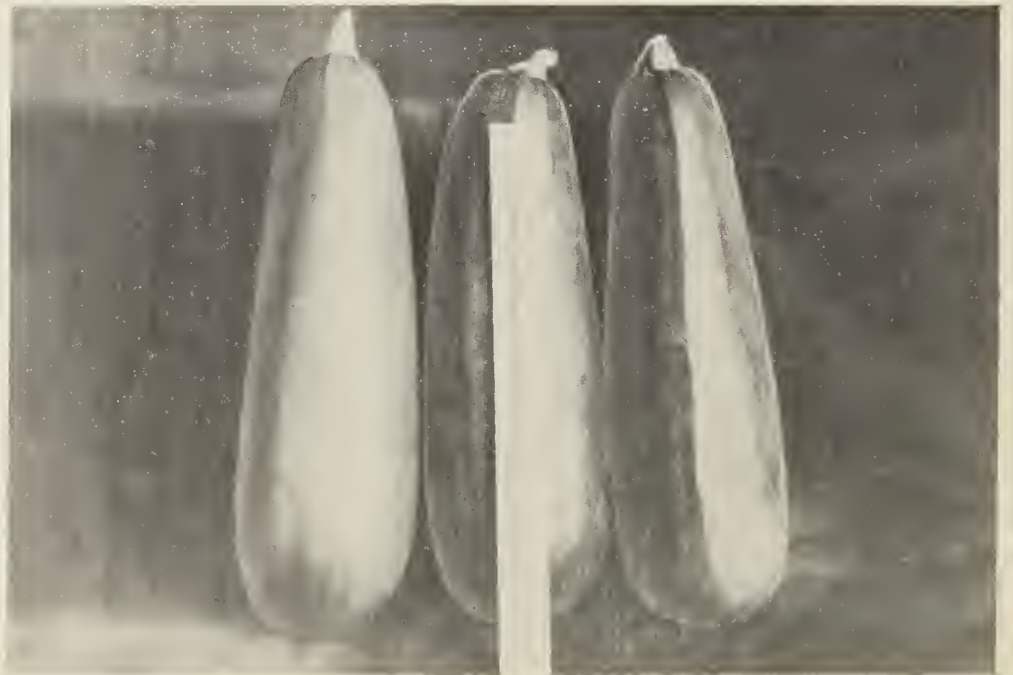
Size: $12 \times 4\frac{1}{4}$ inches

Weight: $3\frac{1}{2}$ pounds

Edible in 60 days

Used when young

It belongs to the Vegetable Marrow family. The color is mottled light and dark green, giving it a grayish appearance. The squash are used when young, often when real small and tender, and the edible qualities are excellent. They are a favorite among the market gardeners.





GOLDEN TABLE QUEEN—C. pepo.

Size: $5\frac{1}{2} \times 3\frac{3}{4}$ inches

Weight: $1\frac{1}{4}$ pounds

Edible in 58 days

Used when mature

This new strain resembles the regular Table Queen in general appearance except that the size is slightly larger and the color is a beautiful deep golden. It has been developed from the green Table Queen to a high degree of purity and uniformity. The fruits are ribbed and pointed at the blossom end. The orange flesh is thick, dry and of fine texture. It is a long keeping variety and the fruits are edible from early fall throughout the winter months when properly stored. The golden ripeness of this squash gives it an attractive appearance on the market that appeals to the critical buyer.



EARLY SUMMER STRAIGHTNECK

Lemon Color

—C. pepo (melo pepo.)

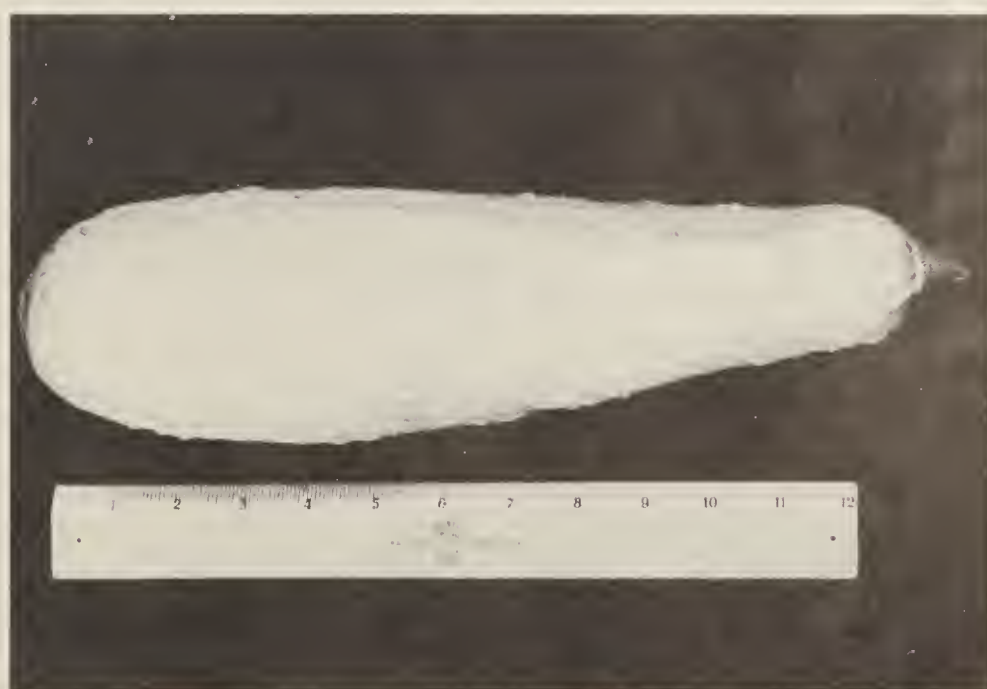
Size: $12\frac{1}{2} \times 3\frac{3}{4}$ inches

Weight: 2 pounds

Edible in 50 days

Used when young

This is a small early type corresponding in size with the Early Summer Crookneck Squash. It is lemon yellow in color and is a medium warted squash of the proper size for packing and market purposes. The vines are highly productive and the strain is very desirable for use by market gardeners.







Pumpkin

(*French*, POTIRON; *Italian*, ZUCCA; *Spanish*, CALABAZA TOTANERA;
Danish, GRAESKAR; *German*, MELONEN-KURBISS)

The normal acreage for seed in the United States is about 2,000, with an estimated annual production of 300,000 pounds. The seed is produced principally in Nebraska, Colorado, California, New Jersey and Michigan.

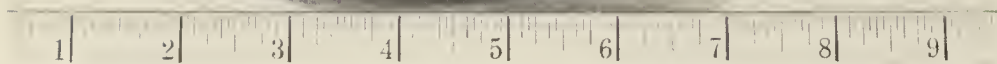
From "THE PUMPKIN"

Ah! on Thanksgiving day, when from East and from West,
From North and from South come the pilgrim and guest,
When the gray-haired New Englander sees round his board
The old broken links of affection restored,
When the care-wearied man seeks his mother once more,
And the worn matron smiles where the girl smiled before,
What moistens the lip and what brightens the eye?
What calls back the past, like the rich Pumpkin Pie?

Oh! fruit loved of boyhood! the old days recalling,
When wood-grapes were purpling and brown nuts were falling!
When wild, ugly faces we carved in its skin,
Glaring out through the dark with a candle within!
When we laughed round the corn-heap, with hearts all in tune.
Our chair a broad pumpkin,—our lantern the moon,
Telling tales of the fairy who traveled like steam,
In a pumpkin-shell coach, with two rats for her team!

Then thanks for thy present! none sweeter or better
E'er smoked from an oven or circled a platter!
Fairer hands never wrought at a pastry more fine,
Brighter eyes never watched o'er its baking, than thine!
And the prayer, which my mouth is too full to express,
Swells my heart that thy shadow may never be less,
That the days of thy lot may be lengthened below,
And the fame of thy worth like a pumpkin-vine grow,
And thy life be as sweet, and its last sunset sky
Golden-tinted and fair as thy own Pumpkin pie!

—Whittier.



BUSH

C. Pepo. (Melopepo)

Size 4 x 6½ inches

Weight: 2 pounds

Matures in 110 days

A new introduction of the Small Sugar type. It is smaller and of lighter color. The flesh is not quite as thick, and the seeds are longer, and more pointed. It grows on a true bush plant whereas all other well known pumpkins are produced on running vines.



CONNECTICUT FIELD (C. Pepo)

Size: 12 x 12 inches

Weight: 18 pounds

Matures in 120 days

It is also called Big Tom. It is the standard corn field variety, producing quantities of large orange colored pumpkins. The fruits are flat on the ends, with a smooth, hard rind. The flesh is adapted for canning, and it is very thick, dry and sweet. Its principle uses are as stock food and for canning.





CUSHAW GOLDEN (C. Moschata)

Size: 24 x 8 inches

Weight: 16 pounds

Matures in 115 days

The Cushaw types are used mainly for stock feeding and grown in fields, among corn. This strain is used to some extent for canning. The flesh is dry, sweet, and the vines produce large numbers of fruit. It is not as widely used as the other Cushaws.



CUSHAW GREEN STRIPED

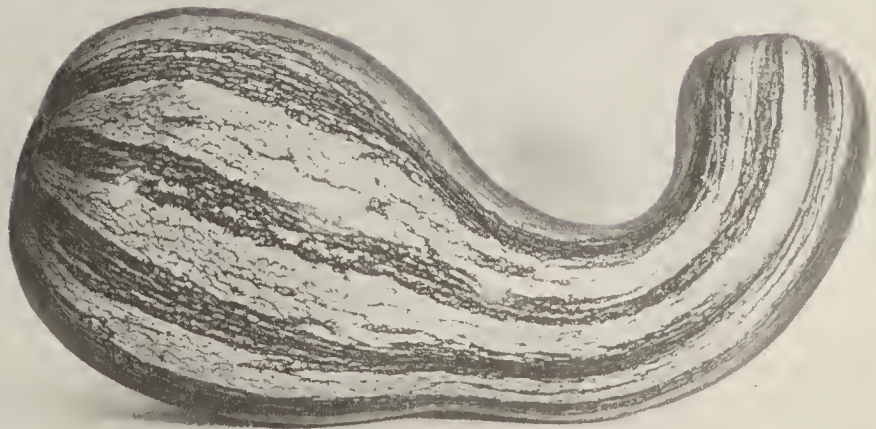
(C. Moschata)

Size: 24 x 8 inches

Weight: 14½ pounds

Matures in 115 days

The fruits are crooknecked with the seeds in the blossom end or bowl; the rind is white, mottled with irregular green stripes. It is the most popular of the cushaw types; very early and prolific. The seeds are white and highly enameled, and it is largely used as stock food.





CUSHAW WHITE

(C. Moschata)

Size: 18 x 7½ inches

Weight: 11 pounds

Matures in 112 days

It is similar to the Green Striped strain except somewhat smaller and the skin is pure white. Also the neck is shorter than in the other Cushaws. It is sometimes called Trombone or Jonathon.



ESTAMPES

(C. Maxima)

Size: 10 x 18 inches

Weight: 30 pounds

Matures in 120 days

This variety is heavier in proportion to its size than most kinds. The flesh is very thick and sweet; used for stock food, exhibition purposes and canning to some extent. The outside is a deep orange color, with ridges and a roughened surface.





GOLDEN OBLONG
(C. Pepo)

Size: 12 x 5½ inches

Weight: 6 pounds

Matures in 115 days

The fruit is oblong and the flesh is dry and very thick. The skin is smooth and the color, a bright orange. It belongs to the Small Sugar family; has excellent keeping qualities, and is used for pies. The variety is not widely used.



JAPANESE PIE
(C. Moschata)

Size: 15 x 8½ inches

Weight: 12 pounds

Matures in 115 days

It is a deep green, almost black in color, and the shape is like the cushaws, but the neck usually grows straight. Heavy ridges often appear near the stem end; the variety is early, and popular for stock food and canning. Its seeds are large, white and engraved or marked in an unusual manner.





KENTUCKY FIELD
(*C. Moschata*)

Size: 10 x 12 inches

Weight: 15 pounds

Matures in 120 days

The fruits are a little similar to Large Cheese but are considerably thicker. They are not identical in our opinion. Kentucky Field is used very largely for canning and feeding stock. It is a very hardy, late variety. The outside color is yellow or light orange.



**KING OF MAMMOTH
OR POTIRON**
(*C. Maxima*)

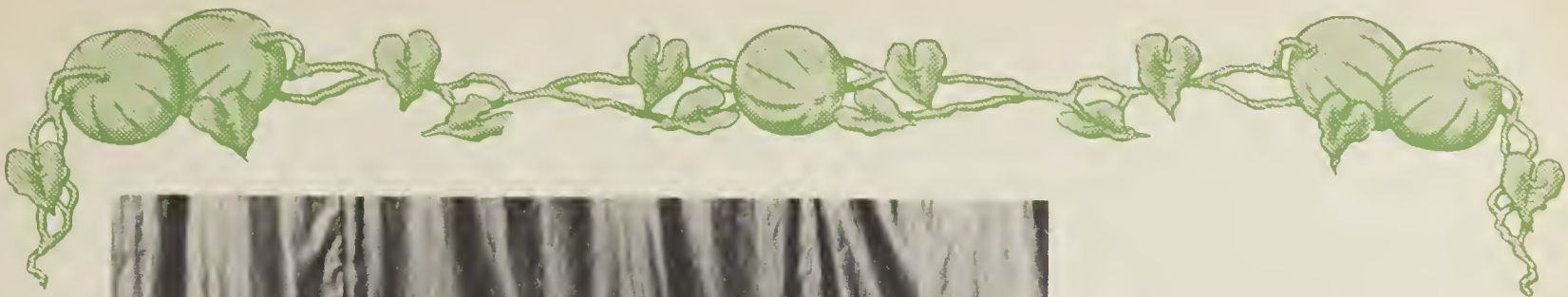
Size: 18 x 18 inches

Weight: 60 pounds

Matures in 120 days

This is the largest of the pumpkins, often growing to 100 pounds when but one fruit is permitted to remain on the plant. It is used largely for stock feeding and for exhibition purposes. They are a bright orange color with lighter stripes between the ribs. The flesh is hard, firm, and while a little coarse in texture, is of good quality.





LARGE CHEESE
(*C. Moschata*)

Size: $5\frac{1}{2}$ x $11\frac{1}{2}$ inches

Weight: 14 pounds

Matures in 110 days

It derives its name from its similarity to a cheese box; the fruits are very flat, ribbed, and it is buff or cream colored. It is in wide use for canning purposes; keeps exceptionally well; and is prolific and disease resistant.



MAMMOTH TOURS
(*C. Pepo*)

Size: 16 x 12 inches

Weight: 25 pounds

Matures in 120 days

This variety is not widely used but is desirable for stock feeding. The shell is hard, thin and smooth, often mottled with green and yellow. The flesh is coarse and stringy, and the seeds are brown and very large.





QUAKER PIE
(*C. Moschata*)

Size: 10 x 7 inches

Weight: 9 pounds

Maturation in 115 days

The fruits are pear shaped or pointed at the stem end. The skin is cream colored, very smooth and hard, and the flesh thick and sweet. It is an early variety, but not widely used.



SMALL SUGAR
(*C. Pepo*)

Size: 5½ x 7 inches

Weight: 4 pounds

Maturation in 115 days

Also called Boston Pie or New England Pie. It is rather late in maturity, very prolific, and its thick, sweet flesh is adapted for all purposes. The fruits are flat on the ends; the color is a deep orange and the rind shows distinct ridges or stripes. It will store exceptionally well; it is used for canning and is the favorite pie pumpkin.





**TENNESSEE
SWEET POTATO
(C. Moschata)**

Size: 14 x 9½ inches

Weight: 14 pounds

Matures in 110 days

The fruits are bell shaped with a white skin, slightly mottled with a light green stripe. The seeds are large and highly enameled with the strange engravings similar to those of Japanese Pie. It is an early type and has thick, sweet flesh of creamy white color.



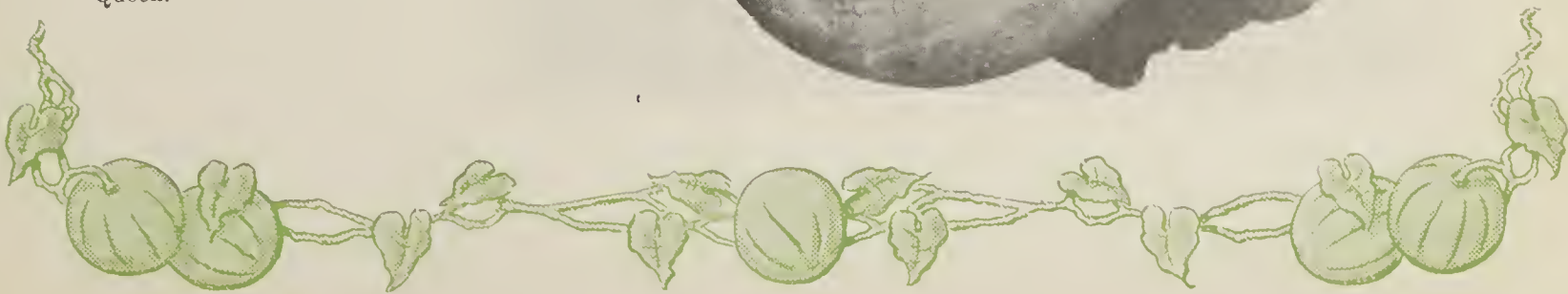
**WINTER LUXURY
(C. Pepo)**

Size: 7 x 8 inches

Weight: 6½ pounds

Matures in 105 days

The shape is very much like Small Sugar Pumpkin but it is larger in size. The color is orange and the entire fruit is covered by a fine, gray netting. It is one of the sweetest varieties; early and prolific; used chiefly for pies. It is sometimes called Winter Queen.









Gourds

Least in importance among the cucurbits and indeed, of as little practical value as any well-known vegetable, they are nevertheless, one of the oldest known to mankind. The Lagenaria gourd is of old world origin for water flasks have been found in Egyptian tombs of the 12th dynasty — 2200-2400 years B. C.

They are found in their various uses and varieties in nearly every part of the world. Only a few of the better known kinds are listed by seedsmen but in all there must be hundreds of varieties in wide diffusion. Our list includes some 100 kinds. The common ones are described herein, but many, we have not given detailed space because of their economic lack of importance. Likely no other fruit of the entire plant kingdom offers as much variation in shape and color as does the lowly gourd. Gourds are of especial interest to children and growing them is one way to encourage an interest in plants. They are a hardy, quick growing climber and are therefore useful for covering fences and trellises. They can be trained to grow in a number of interesting shapes by the use of forms in which to place the young fruits.

The hard-shell tree gourds are used in tropical latitudes for many purposes as in the olden days. We have seen them grown thus in the West Indian Islands and utilized as containers for every day use by the colored natives. A number of the long, club-shape kinds are considered edible when young and properly prepared, they have much the same flavor as certain squashes. The white blossom, hard-shell lagenarias, which include such kinds as Dipper, Sugar Trough, Bottle and Calabash can be made into a wide variety of attractive articles, painted and decorated to suit individual taste. Some of the work which we have seen includes: baskets, vases, bird houses and feeders, dippers, pipes, lamps, birds, animals, musical instruments and dishes. Some outstanding collections exist today by those who have followed this hobby.

The Lagenarias will not cross-pollinate with any of the other Cucurbits. The decorative Turban types and colorful ornamentals which belong to the family C. Pepo will likely cross-pollinate with some of the pumpkins and squash. These fruits have come into popular use in recent years and demand often exceeds the supply. A common practice is to preserve the fruits in natural color for decorative purposes, table center-pieces as imitation fruit, etc. It has been said of the gourd:

Oh! the old-fashioned dipper
Is sweeter by odds,
Than a goblet of gold
To the lips of the Gods.

—Anonymous.

The International Gourd Society with headquarters in California has a large and active membership. Their annual harvest festivals and gourd displays attract many thousands of visitors. Their publications are exceedingly interesting, free to members and the annual dues are nominal. Further information upon request.



1 — APPLE

The fruits are small, round and white in color. The size is about that of a good sized apple. It is a very sturdy, hardy variety. The seed are quite small and white.

2— JAPANESE NEST EGG

The fruits are similar to a hen's egg in size and shape, and they are used by keepers of poultry. The seed are small and white; we believe this variety produces the largest number of fruits of any variety of vine seed.



CALABASH

Its chief use is for making calabash pipes, the stem end being used for this purpose. The fruits are cream colored and grow in a variety of interesting shapes. The blossom end contains the seed, and is bulb shaped. The seed are brown and almost square in shape.





DIPPER

A widely used variety, growing in the shape of a dipper, and it is often used for this purpose. When the fruits are thoroughly cured the shells are very hard; almost horn-like, and really make excellent dippers. The seed are brown and long.



3— ORANGE

About the size of an orange; the skin is a deep orange color, while the seed are small and white. It is not widely used.

4— PEAR

As its name indicates it is pear shaped and alternately striped orange and green; the seed are small and white, and it is exceedingly prolific.





SUGAR TROUGH

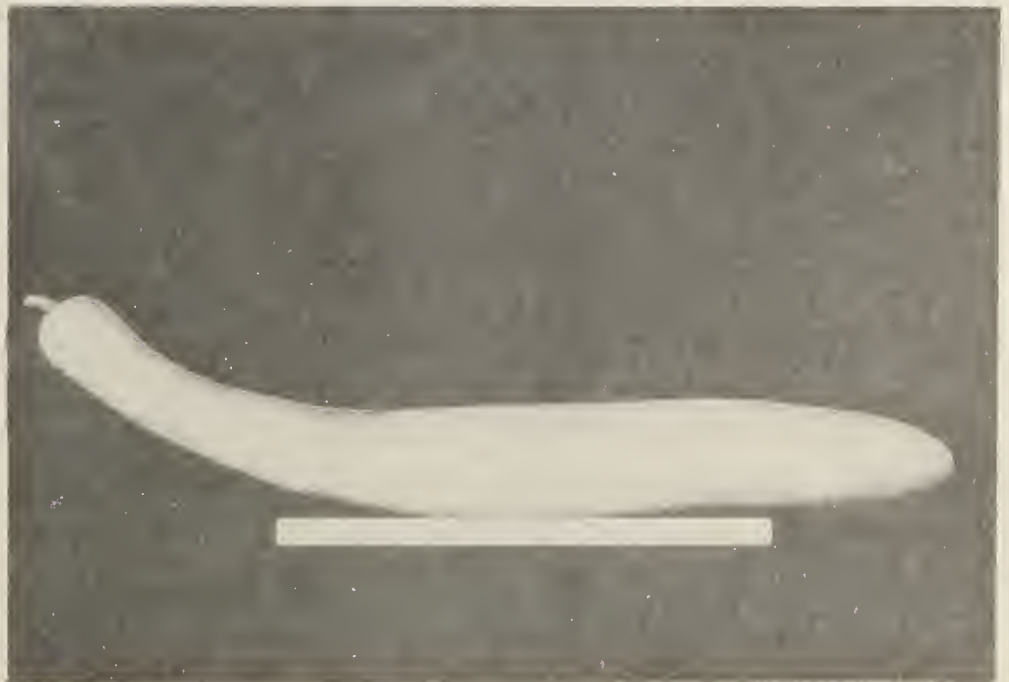
The largest of the gourds. It is frequently used for holding water or other materials around the house. We have had them with a capacity of five gallons. The color is a light cream; the seed are brown and almost square.



LEUCANTHA LONGISSIMA LAGENARIA

True Italian Edible Gourd.

The average length is about two feet by $2\frac{1}{2}$ inches in diameter. The color is light green when young and the flesh is thick and tender. It is prepared and eaten in about the same manner as summer squash and is a favorite delicacy in Italian gardens.





Gourds grow in many interesting shapes, among the turban types some of the brightest colors are found. One fruit may be marked with five or six different colors, strikingly arranged.

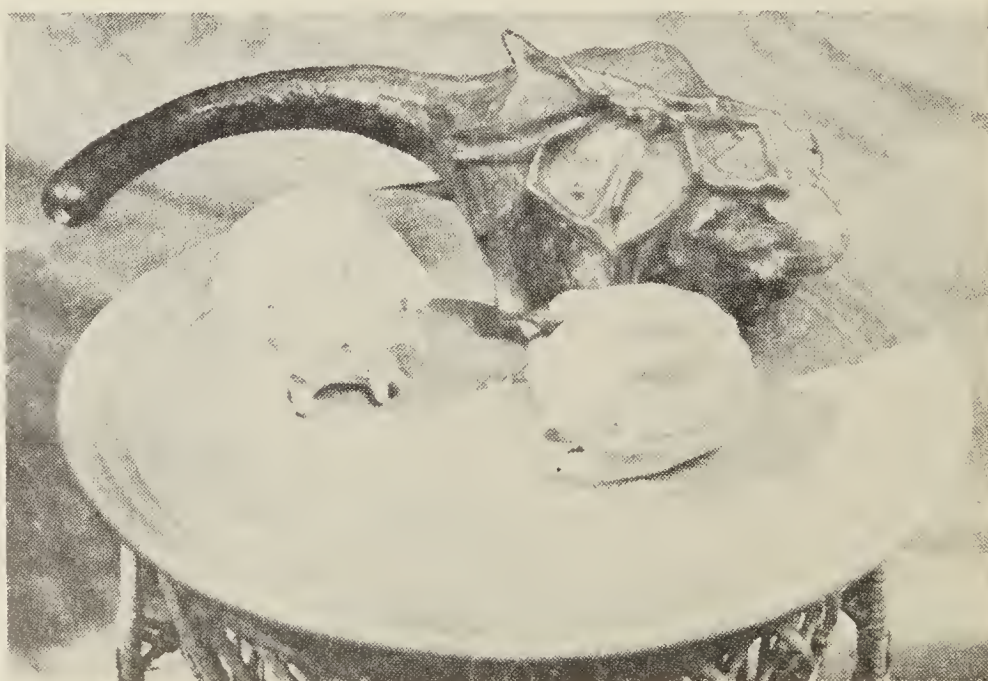
DISHCLOTH

The seeds are very black and heavy; the peculiar interior is sponge-like, and is often used as its name indicates.

HERCULES CLUB

The fruits are extremely long and large; while they are cylindrical, yet they taper to the stem end. We often have specimens of this variety 3 and 4 feet in length; when thoroughly dry the fruits are amazingly light in weight. The vines are very thrifty and rapid climbers.

The Crown of Thorns or Ten Commandments and Marankas Gourds.





Articles Made from Gourds



Some of Our Waterloo Warehouses





Our branch office at ROCKY FORD, COLORADO, where cantaloupe and cucumber grow to perfection.



Our warehouse at Modesto, California.
Many of the watermelon, squash and pumpkins are produced in California.



A field of Early Summer Squash in Nebraska.



The new wilt resistant watermelons thrive on wilt sick soil. This crop received no moisture for two months, during one of the hottest seasons on record in Nebraska.



H. E. Allerdice in our California trial gardens.



J. M. McCormick of our Modesto, California, office.



Inspecting Original Hales Best Cantaloupes.
A. W. Tibbitts, H. R. Livingston, L. R. Robinson, H. W. Veal and B. L. Ross.



Improved Long Green Cucumber sometimes attains surprising length.
"Longer than a foot."



Harry Livingston with a 'Colorite' Cucumber.



A field of White Spine Cucumbers ready for harvest in Colorado.



Hand seeding Hubbard Squash in Colorado.



Tip Top Muskmelon

It requires four men to keep a cucumber harvester working at capacity.



The cucumber seed and juice from the fruits are hauled in "slop carts" to the fermenting pits.



Three days are required in normal weather for seeds to ferment properly. Rain, snow or freezing weather are often responsible for dark colored seed and damage to germination.



Washing and curing of seed crops is a highly technical process. The seeds are usually rubbed by hand to retain bright color while on the drying trays.



A breeding plot under muslin covers for hand pollination on vineseed.



Everyone likes the new wilt resistant Kleckley Sweet.
Standing: Edward, son of E. T. Robinson, and Arleigh, son of the editor.



From Egypt: "She is sad when I tell her this half is too big for her."



"She is happy at the prospect of two melons to feast upon."



Columbus landed at this West India island in 1493, negotiating almost impassable reefs. At Lighthouse Point, in the distance is one of the deepest parts of the Atlantic.



Fresh vegetables are displayed for sale by the natives of the Virgin Islands.



St. Thomas, Capital of the Virgin Islands. Historical home of pirates and clearing house in the days of slavery.



Beautiful wild orchids adorn the jungles
of the tropics.



Yosemite Falls,
Yosemite National Park, California.



"Sun Temple" or place of worship among the ruins of the cliff-dwellers on Mesa Verde National Park near Cortez, Colorado. These tribes inhabited their homes along the steep canyon walls about 1100 years ago and are supposedly the ancestors of the present day Pueblo Indians. A nearby museum contains articles found among the ruins, which includes well preserved specimens of squash apparently members of the group C. Maxima. In the foreground: Wm. Emerson, L. W. Corbett and R. H. James.



Among the cliff ruins and subterranean 'kivas.'



Bonneville salt flats of Utah where auto speed records were established.



Somewhere in Old Wyoming.

Plant Breeding

Throughout this discussion where we refer to "Plant Breeding" it should be kept in mind that it applies to the Cucurbita family. Plants of most of the Cucurbits are Monoecious—that is they bear both staminate (male blossoms) and pistillate (female blossoms) on the same plant. Therefore fertilization is possible either within one plant or by cross-pollination between two plants. In a majority of varieties of Muskmelon the plants are Andro-monoecious. They bear hermaphroditic as well as staminate flowers. However, in all cases the transfer of pollen by artificial means is necessary to obtain fertilization. Usually bees are the chief factor in the distribution of pollen. Wind and other causes are not noticeably instrumental in its transfer among vine seeds. Under ordinary conditions it is generally considered that about 15 per cent of the blossoms are fertilized from adjacent plants while some 85 per cent are pollinated from blossoms of the same plant, although there are no definite rules by which this percentage may be determined. The staminate blossoms which produce the pollen appear profusely and usually in advance of the pistillate blooms. The pistillate or female bloom appears at the end of a tiny fruit and lives for about one day. Unless it does become fertilized during this time the fruit eventually withers and dies, although it may appear normal for a number of days, often attaining considerable size, the seeds cannot develop within the fruit unless fertilization has been completed.

Generally growing conditions govern the set of fruits on the vines to some extent. In extremely hot weather fertilization is less successful probably because the pollen cannot endure the high temperatures. When fertilization has been but partially completed the fruits often appear misshapen or are described among cucumbers as "nubbins." Nubbins and illshapen fruits are almost wholly the cause of improper fertilization or growing conditions. This result is not hereditary. About three distinct sets of fruit appear during the growing season in the production of seed crops; each set appearing at regular intervals and the final yield depends upon the ability of the plant and general conditions. If the fruits are kept picked they will continue to bear throughout the growing period.

The simple method of inbreeding has been employed successfully as a means of developing purity within a variety. The advantages of breeding or control of pollination are recognized as of much importance in accomplishing permanent results in the maintenance of seed stock. To obtain the desired results by inbreeding, a thorough knowledge of the procedure must be understood, as well as a definite knowledge of type in the individual variety. The usual principle is to start with the seed from a single specimen fruit which shows a majority of the most desirable characteristics. This fruit should come from a vine bearing only true progeny and well isolated from other plants of undesirable nature from which it may have become contaminated.

Inbreeding may be accomplished by the bagging system or by the use of a muslin cover over the complete plant. Where bags are used for each individual blossom it must be placed over the young bud before it has opened. After the transfer of pollen has been made the female blossom must again be covered for a time to prevent the possibility of pollen from outside sources. In the use of covers over the whole plant the necessity of bags is entirely eliminated. The transfer of pollen is more satisfactorily effected by direct contact of the two blossoms.

The progeny of these plants are then chosen from which to continue this process through following generations until the type has finally been fixed to the satisfaction of the producer. A number of years are ordinarily required to obtain permanent results. Properly conducted, the work is most gratifying, as the development of a pure line strain is the highest degree of purity in vine seed. It is generally agreed that inbreeding of the cucurbits does not reduce vigor, yield, or in any other way detract from quality but on the other hand is inclined to build up a more uniform type.

In our tests we have found a wide variation in the number of fertilizations which are successful among the various Cucurbits. In cucumber over a given season we have found that nearly 90 per cent of the hand pollinations were successful. Whereas in others, such as Squash and Muskmelons, at times a very small per cent has been recorded.

When two pure line strains are crossed for the purpose of deriving a new variety the result is hybridization. According to the Mendel law of plant heredity the F₁ generation of a cross will exhibit phenotypically all of the

dominant characters from both parents plus any recessive characters present in both parents that may come together to form a homozygous genotype, in which case such recessive characters would be expressed in the F₁ generation cross.

Inbreeding of the F₁ generation cross will cause the phenotypes to break down into homozygous dominant characters, homozygous recessive characters and heterozygous characters: the ratio being 25 per cent homozygous dominant, 25 per cent homozygous recessive. These will breed true as such in all future generations if maintained in the homozygous condition. 50 per cent of the population will be heterozygous and phenotypically will be like the homozygous dominant but genotypically will be like the F₁ generation cross and will break down in similar ratios when inbred. The eventual result is that a new variety is developed which may combine the desirable characteristics of both parents by careful selection and inbreeding over a number of generations. It usually requires at least three generations of this work and often many more to produce a fixed type. Sometimes it becomes necessary to back cross to either one or the other or both of the parents to establish some particular characteristic which may be desired. The field of hybridization offers some possibilities toward higher accomplishments among vine seed. So far no one seems to have conducted sufficient experiments to exhaust the results that may be expected.

Some success has been recorded in the use of pickling blends in cucumber seed. It usually consists of a mechanical mixture of seed of three varieties. This includes about 80 per cent of the most desirable kind with 10 per cent each of two similar varieties. It is believed that a certain amount of hybridization exists which may tend to increase yields and perhaps include other advantages to a limited degree at least. In our opinion it primarily serves to produce an assortment of types which may be desirable for the various sizes required for packing. The fact that these individual varieties are not pure line strains would prevent a result which could be definitely determined in advance, so far as type is concerned, by cross-pollination. Usually it is not advisable that seed from these blends be used for reproduction because individual types would eventually disappear by the crossing of varieties.

METAXENIA

There apparently is no metaxenia among Cucurbits; that is, no instant effect of the pollen in hybridization on the fruits themselves, so far as can be determined by the naked eye, although it may be possible that pollen from an unrelated plant may have a somewhat more invigorating effect and thus increase yields to some extent. It seems apparent that this has been demonstrated under growing conditions when two stocks have accidentally crossed. There appears to have been an increase in the yield of fruits; however, no effect is noticeable that would indicate crossing between the two varieties in the first season and it would not actually be discovered until the following generation.

ISOLATION

The distance between varieties to avoid mixture is an open question. It is safe to believe that pollen can be carried as far as bees can fly or as long as the pollen retains its reproductive characteristics. Likely no harmful quantity would be carried over long distances at any one time but when two crops are produced within a close distance of each other, a considerable mixture may be expected among those crops which will readily cross-pollinate.

In our tests we have not found that any of the Cucurbits will cross outside of their own genus. In the case of Squash and Pumpkin, which are divided into different groups but of the same family, the two groups, *C. Maxima* and *C. Moschata* will cross. Likewise *C. Moschata* and *C. Pepo* will cross. Otherwise no other combinations in vine seed will habitually cross-pollinate under ordinary conditions; however, any two varieties of the same genus will naturally cross, readily, within the distance that pollen may be disseminated by insects.

There is no truth to the ancient belief that cucumber affects the flavor or quality of muskmelon when planted close together. In our experiments of hand pollination between staminate blossoms of cucumber on pistillate blossoms of muskmelon, fertilization did not occur. On very rare occasions the fruit would continue to enlarge for a time, but in no instance did it reach maturity. From the results reported by others in this same experiment, a fruit has attained almost full size and was normal in appearance but seed did not develop and reproduction would thus be impossible. This therefore goes to prove that when mixtures or off-types occur in vine seed they

are the result of mutation or of cross-pollination between similar varieties. When cucumbers appear in muskmelon fields or vice versa, a mechanical mixture is responsible.

When hybridization is used in the crossing of two varieties to accomplish a definite purpose such as disease resistant characteristics, one parent is usually immune to a certain plant disease. Through the process of inbreeding that desirable feature may eventually become a hereditary characteristic in the new progeny. The new variety may combine the desirable qualities and otherwise resemble one of its parents with the addition of the disease resistance of the immune parent. Continuous inbreeding eventually establishes a true variety which environmental conditions does not change to any marked degree. This is the procedure which has been used to develop the mildew resistant cantaloupes, wilt resistant watermelons, and other recent introductions designed to withstand certain plant diseases. This field offers much possibility to the plant breeder who is equipped to carry on the work. In our opinion many new features will be developed as time goes on and many of our present standard varieties will eventually be immune to the more serious diseases as well as certain of the insect pests. Immunity to disease can also be accomplished by careful selection work and has proven satisfactory in some cases. It is necessary to start with a single plant which shows a high resistance and continue to develop it until it has reached perfection.

GERMINATION

The laws governing germination requirements on garden seeds are becoming increasingly severe in interstate commerce. Many States now require purity and germination tags as well as the date of tests and state in which the seeds were grown. It has long been the custom in field seed but the vine seed crops especially are not likely to include foreign seeds so far as purity is concerned. The standard requirement in germination is 85 per cent. Many features enter in to affect tests in vine seeds but for the most part they are conditions surrounding the curing and harvesting processes.

We have observed especially in watermelon seed a tendency to absorb moisture and thus delay germination in some cases. This has occurred chiefly where the seed is stored in climates where damp weather is prevalent. Ordinarily all the Cucurbits will retain their vitality over a period of about five years. On many occasions longer periods have been recorded.

PLANTING METHODS

In the production of seed crops, more seed is planted per acre than is usually required for commercial fields. Cultural conditions often govern the size of fruits as well as maturity dates, quality and flavor. Planters with a wide experience in these matters state that they can very closely control the size and maturity dates by the proper methods of planting and care. When size is desired, the distance between rows and distance of plants in the row play an important part in determining these features. Most of the Cucurbits will readily adapt themselves to climatic conditions and respond to the proper care.

Plant Diseases

In recent years much thought has been given to plant diseases, especially toward the development of resistance in varieties to some of the most destructive kinds. There are numerous forms of disease and a variety of measures must be used in their control. Some are not of sufficient distribution to require serious consideration but in all there are about twenty-five kinds more or less harmful to the cucurbits. About nine of these are likely the most serious in America and we list them as nearly as possible in the order of their importance.

In dealing with plant diseases we feel that commendable progress has been made in recent years and yet much remains to be done. It is our opinion that this field offers much promise for the near future in the development of disease resistant varieties. Further, that the recommendations of our leading growers should be carefully considered with a view to giving them our complete cooperation in the distribution of these new introductions of proven merit.

It seems likely that most forms of plant disease can be controlled to some extent by simple precautions, such as the disposition of refuse, trash, weeds, etc., from the fields and the proper eradication of host plants and insects. Few diseases are actually seed borne among the cucurbits, nevertheless, some of the most dangerous kinds are carried on the seeds themselves. The fact that machine harvested seeds are fermented in vats where portions of the rind and often vines too are included among the seed is one of the ways that disease germs can come into actual contact with the seeds. The washing and curing processes which follow do not entirely remove all germs of disease. Hence, seed treatment is now recommended by many authorities to prevent general distribution of diseases about the country. It is further protection against plant pests and unfavorable soil and germinating conditions at planting time.

For the reason described above hand cut seed which usually contains none of the outer rind of the fruits is superior to machine harvested crops, especially muskmelon, certain of the squash, etc., which are more often harvested by hand methods under normal circumstances.

We do recommend that seedmen's supplies come from those production areas which have proven their freedom of plant diseases.

DISEASES OF CUCURBITS

BACTERIAL WILT:

Bacterial Wilt was first discovered near Washington about 1893. It affects Cucumber, Muskmelon, Squash and Pumpkin but Watermelons are almost wholly immune. The term wilt exactly expresses the symptoms that may be observed on the outside of the plant. When infection takes place bacteria clog the water vessels of the stem and roots until the plant has wilted and died.

Diagnosis may be determined by testing the sap for viscosity. The sap in a healthy plant is clear and watery but when bacterial wilt is present the fluid appears sticky when allowed to collect on a cut surface of the stem. In severe cases the sap may be milky white in color.

CAUSE:

The parasite is *Bacillus tracheiphilus* and depends on the common cucumber beetle for aid in its life cycle. The bacterium lives over the winter in the digestive tract of the beetle and thus is disseminated to the young plants through injuries and its spread is more general when moisture is prevalent. The organism is very sensitive to heat. Its thermal death point is 110 degrees F.

CONTROL:

While the plants are young control depends on the eradication of the striped and 12-spotted cucumber beetles. As the plants grow older a 4-4-50 Bordeaux spray or Copper Lime Dust aids in lessening the number of infections. The infected plants should be removed from the field. (See control formula for beetles under Plant Insects.)

MOSAIC

Mosaic, which is also known as "White Pickle" nubbins disease and Chlorosis has been known for many years. It is generally prevalent throughout the United States and Canada. Next to Bacterial Wilt it is probably

the most serious disease affecting the Cucurbits. Cucumber, Summer Squash, and Muskmelon are the most susceptible. A number of wild plants serve as hosts and are responsible for the spread of the inoculum.

SYMPTONS:

It is characterized by a dwarfing of the plant, mottling, yellowing and wrinkling of the leaves and warting, curling, and mottling of the fruits.

CAUSE:

The cause is undetermined but the trouble is very infectious. Juice from affected plants produces the disease in healthy ones when inoculated into them by an agent. Among the most common host plants are wild cucumber, milkweed, poke weed, ground cherry, and catnip. It over-winters in their roots or seed and is carried to cultivated crops in the spring by insects, chiefly by the cucumber beetles and plant aphids.

CONTROL:

The thorough eradication of wild host plants around the fields, combined with rigid insect control measures have proven successful in controlling Mosaic. Important progress has been made in the development of Cucumber varieties capable of withstanding this disease.

ANTHRACNOSE

No disease of Cucurbits is more destructive than Anthracnose. It has been known for more than fifty years and is common in every country where cucurbits are grown. In many markets it is difficult to find Watermelons or Muskmelons that do not show at least a few spots. Watermelon are most severely infected but the disease often appears in epidemic form on Cucumber and Muskmelons, as well as the other cucurbits, in a lesser degree. Varietal susceptibility to this disease is quite noticeable, however.

SYMPTONS:

Any portion of the plant above ground may be affected. The spots on the foliage begin as small yellowish water soaked areas which enlarge rapidly and turn brown in most cucurbits. In the case of Watermelon, they become black. These spots are about one-fourth to one-half inch in diameter on the leaves and appear as elongated sunken lesions on the stems. The young fruits may darken, shrivel and die. On Watermelons the spots vary from one-fourth inch to two inches in diameter and appear as black sunken cankers. When moisture is present the dark center of the lesion is covered with a gelatinous mass of salmon-colored spores.

CAUSE:

The most commonly used term for this fungi is *Colletotrichum lagenarium*. The disease remains alive in the old dead tissue in the soil at least one winter as well as in the seed themselves. The young plant may become inoculated at any stage of growth by the various distributing agencies. The fungus becomes epidemic usually during excessive rainfall, although it requires relatively high temperatures, growing best at 75 degrees F.

CONTROL:

As the pathogene lives over for at least one season in the soil, a two year crop rotation is essential. Treatment of the seed with corrosive sublimate as outlined under (Seed Treatment) is a preventative. Infection in the field can be avoided by spraying with bordeaux.

ANGULAR LEAF SPOT

The disease was first discovered about 1905 and is serious only to Cucumber.

SYMPTONS:

It attacks particularly the leaves, causing angular water-soaked spots one-sixteenth to one-eighth of an inch across. The water-soaked area later turns gray, dies and often drops out. The spots on the fruit are smaller in size and circular in shape. When the diseased portion becomes white and cracks open it permits the entrance of soft-rot organisms, which will often cause decay of the entire fruit.

CAUSE:

Angular leaf spot is caused by *Bacterium lachrymans*. It lives over the winter on the surface of the seed or in the diseased plants about the field. Frequent rains accompanied by rather high temperatures are optimum conditions for the growth of the bacterium.

CONTROL:

Spraying, as outlined for the control of Anthracnose, and also dusting are effective. Seed treatment and crop rotation are preventive measures.

FUSARIUM WILT

Fusarium Wilt first received serious consideration about 1900. It is extremely serious in many parts of the country and is most destructive to watermelons, and possibly squash, while most of the other cucurbits show marked resistance. The disease enters the plant through the roots and is destructive to the seedlings or to the plant at any stages of its growth. The infected plant may die suddenly or it may remain alive indefinitely in a dwarfed condition.

CAUSE:

A soil organism known as *Fusarium niveum* which may exist in the soil for many years even though the host is absent and may be disseminated by the seed themselves. Presence of the wilt disease may be determined by breaking and examining the root of an infected plant. In the case of watermelons, the diseased portion within the root will be of a brownish color.

CONTROL:

Seed treatment with corrosive sublimate is a control measure to prevent the spread of this disease. As the organism can exist indefinitely both on the seed and in the soil, crop rotation over ten to fifteen year periods is necessary. Watermelons cannot usually be grown on the field within this length of time. Fortunately, resistant strains of watermelons have been developed which have proven their ability to withstand the most seriously infested soil conditions. The Iowa Experiment Station has released a number of kinds, the best of which at this time are Improved Kleckley Sweet No. 6 and Improved Stone Mountain No. 5. The University of California College of Agriculture has developed the California Klondike R 7 which shows immunity to a high degree. Other recent introductions in watermelon have also proven desirable.

POWDERY MILDEW

This form of Mildew was first reported in America about 1890 and is common wherever the host plants are grown. The disease is seldom of economic importance under field culture except in localities where extreme humidity exists. Irrigation and heavy dews, with the lack of drying winds contribute to its spread. It affects all of the cucurbits to a certain degree. Mildew resistant cantaloupes, capable of withstanding the disease, have now been developed for the important shipping sections.

CAUSE:

The most common fungi responsible for Powdery Mildew are known as *Erysiphe cichoracearum*. It appears as a talcum like growth on the surface of the plant resulting in brown, dried spots which eventually die in severe cases. When the entire foliage of the plant is affected it turns to a yellowish color and the fruits become of inferior quality.

CONTROL:

The parasite is able to live over the winter on parts of the infected plant. Plowing under or destruction of diseased plants is a control measure. Spraying and dusting as recommended for previous diseases are effective in eradicating the fungus. It can be controlled in a closed greenhouse by the fumes of a heated pot of sulphur or by dusting with sulphur. Resistant varieties have proven highly satisfactory. Hales Best No. 45 is the standard resistant strain among cantaloupes.

DOWNY MILDEW

The disease appeared first in this country about 1890, being observed in New Jersey. It attacks Cucumbers and Muskmelons most seriously, being less severe on Squash, Pumpkin, and Watermelons. All varieties of each host are about equally susceptible.

SYMPTONS:

It appears first at the central part of the plant in the form of irregular yellowish spots on the upper side of the leaves. If the under side of the leaf is examined when moisture is present the lesions will show a purplish border of fungus growth. The disease spreads rapidly until the whole leaf withers and dies. The plants are defoliated until only the ends of the vine remain green bearing partially formed fruit of poor quality.

CAUSE:

The fungus is known as *Peronoplasmopara cubensis*. It fruits the year around in the extreme south and finds its way north by easy stages during the warm season. It may also live over the winter in green houses and spread to outdoor hosts during warm weather. This disease does not live in the soil and is not seed borne. Its growth seems more rapid during rainy periods with cool nights followed by warm days.

CONTROL:

Spraying with bordeaux mixture or dusting with copper lime dust will eliminate Downy Mildew.

ROOT KNOT OR NEMATODES

Root Knot is becoming increasingly serious in practically all parts of the United States except the northern sections. It is everywhere prevalent in greenhouses. The Nema affects all cucurbits about equally. It causes a dwarfing of the plant which wilts readily in hot, dry weather and is usually of a pale green color. The plants may be killed entirely under severe conditions.

CAUSES:

The parasite is known as *Heterodera radiculicola*, a minute worm-like creature that bores into the root near the tip. It feeds on nourishment from the root irritating the tissues in such a way, that knots of considerable size are formed. In the warmer climates it is not uncommon for ten or twelve generations to appear in one year. One female may hatch as many as 500 eggs per season.

CONTROL:

Crop rotation is the most satisfactory method of control, especially with immune crops. Also the fields must be kept entirely free from weeds. Frequent change of crops is helpful to prevent the nemas from adapting themselves to any certain host plant. Steam heat can be used to overcome the trouble in the greenhouse.

CURLY TOP

Curly Top is a disease more generally associated with sugar beets. However, in some sections it has become serious among cucurbits and many other garden vegetables. Squash, Pumpkin, Cucumber and sometimes Muskmelon are attacked. Stunting of the plants is characteristic of the disease on all hosts. The symptoms appear only at the ends of the vine, the shortened runners presenting a rosetted appearance.

CAUSE:


Curly Top is due to a virus which is carried over winter and spread by a sucking insect, the beet leaf hopper, *Eutettix tenellus*. The insects migrate long distances from their breeding grounds and their spread is very rapid.

CONTROL:

Control measures for this insect have not proven effective. The most promising methods seem to be the production of only those kinds which are resistant. Experiments and breeding work are now being conducted toward this end. Some of the Pumpkins, especially those of the group *C. Moschata*, have shown marked resistance. Among winter Squash the Yakima Marblehead is recommended for use where curly top is serious. Squash of the Vegetable Marrow types also appear resistant to this trouble.

Plant Insects

CUCUMBER BEETLES

The striped and 12-spotted Cucumber Beetles attack all plants of the Cucurbit family. Their damage is not only in destruction of the plant but in the spread of a number of the serious plant diseases. They are solely responsible for completion of the life cycle of the organism causing Bacterial Wilt as well as the transfer of the parasite of the Mosaic disease from its wild host. The insects appear early in the season to attack the young plants, having spent the winter months among trash and refuse about the field. Eggs are laid in protective cracks in the soil and hatch within a period of ten days. Their larval period is about one month during which time, they cause damage to the roots. Warm weather is considered as most favorable to their early development. The number of generations in each season is governed by climatic conditions.

CONTROL:

Various methods are satisfactory for their control. A dust consisting of one part calcium arsenate to fifteen parts of gypsum is effective. It is most efficiently applied early in the morning when the air is still and dew is on the foliage. A three per cent nicotine dust is also a suitable remedy. It should be applied when the temperature is about 70 degrees F., and when the foliage of the plants is dry. The use of a 3-3-50 bordeaux mixture as a spray to which 2 pounds calcium arsenate has been added is also recommended, particularly when at the same time the control of some of the fungus diseases is desired.

APHIDS

The melon aphids or plant lice are common pests to cucumber, muskmelon, and watermelon. Their mouth parts are adapted for sucking the juice of the plants and their damage starts on the leaves. The aphids congregate on the under side of the leaves, near the edge, causing them to curl, turn brown and die. They also act as carriers of plant diseases from one plant to another. Infestation occurs throughout the season and is usually increased during comparatively cool weather in late summer months. These insects do not live over winter in the colder sections but the winged adults migrate annually from the warmer regions or are carried by prevailing south winds. Their peculiar reproductive habits are chiefly asexual although sexual forms appear in the fall.

The common belief that aphids are over-wintered as milk cows by ants arises from the practice of the ants in feeding on the "Honey Dew" or residue of the aphids. The ant gently strokes the aphid with its antennae until the insect excretes a clear drop of fluid from the alimentary canal which is eagerly devoured by the ant.

CONTROL:

Ladybird beetles are beneficial as they are serious enemies of the aphids. As the first infestations occur the plants should be destroyed and buried. Dusting the plants with a two per cent nicotine dust is one of the most effective methods of control. For best results this should be applied when the air is still and the plants are dry. Spraying with nicotine sulphur has been found satisfactory but is a more difficult method in reaching the under side of the leaves. This spray should contain three-fourths pint of Black Leaf 40 to one hundred gallons of water to which four or five pounds of soap has been added.

SQUASH BORER

The Squash Borer is a large white grub representing the larval stage of a common moth. It bores through the stems near the roots of Squash, Pumpkin and often both Cucumber and Muskmelon.

CONTROL:

In the case of Squash and Pumpkins, it is possible to split the stem and remove the borer, but when it attacks other plants, it is almost impossible to destroy them without killing the plant. Nicotine sulphate in one part to one hundred parts of water applied to the basic part of the vines at weekly intervals will reduce infesta-

tion. Protective measures are the removal of all the plants in the field after harvest; harrowing the ground lightly in the fall and deep plowing in the spring will keep the moths from coming out.

SQUASH BUG

Squash, Gourds and Pumpkins, as well as Cucumbers, are often attacked by these pests. They are a persistent insect which have been a constant menace to seed production, especially to winter squash. Their mouth parts are adapted for piercing the vines and sucking the juice from the plant. Complete destruction to the crop is often accomplished within a surprisingly short time. They live over the winter under cover of trash and are able to stand low temperatures.

CONTROL:

The egg clusters may be destroyed by picking and burning the leaves to which they are attached. In small gardens the adults may be killed by providing shingles under which they congregate on the ground. A blow torch can be used to some extent when extreme care is practiced to prevent damage to the plants. Spray manufacturers have finally developed a material that will kill these insects without serious harm to the plants.

SEED TREATMENT

For the control of those diseases which are seed borne the use of Corrosive Sublimate (Mercuric Chloride) is recommended. One ounce to 7.5 gallons of water is the proper proportion. The solution corrodes metal so wooden or glass receptacles should be used. The seed is treated by tying small quantities loosely in cheese cloth bags and dipping for five minutes. During this time the seed should be stirred so that all air is liberated and the liquid permitted to come into direct contact with the seed. The seed should then be rinsed in clean, running water and dried before planting. After this process new bags should be used for the seed.

This treatment is recommended for protection against Angular Leaf Spot, Anthracnose and Fusarium Wilt.

NOTE: Inasmuch as corrosive sublimate is deadly poisonous, extreme caution should be practiced in its use.

Damping Off of the young plants has been successfully controlled by the use of red copper oxide, in proportions of one pound to each one hundred pounds of seed. It should be placed in a tight container and well agitated until all seeds are thoroughly covered with the dust.

W. R. Beattie

